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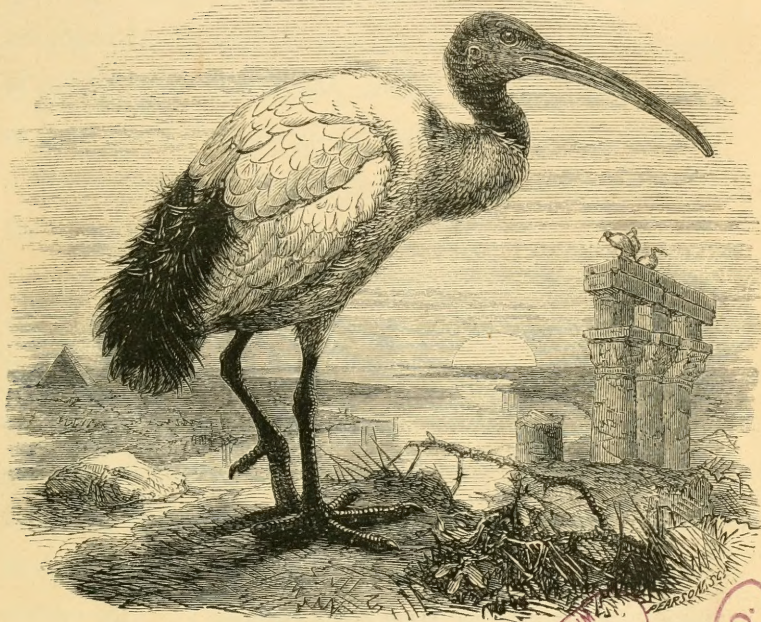


THE IBIS,

A

QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY
ALFRED NEWTON, M.A., F.R.S.,
PROFESSOR OF ZOOLOGY AND COMPARATIVE ANATOMY
IN THE UNIVERSITY OF CAMBRIDGE,
F.L.S., V.P.Z.S., ETC., ETC.



VOL. VI. 1870.

NEW SERIES

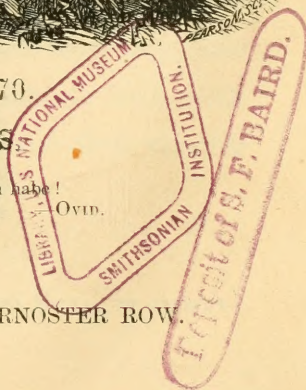
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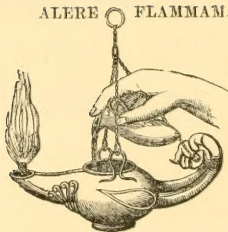
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PREFACE.

ENGAGEMENTS no less pressing than numerous have for some time past urged upon me the advisability of retiring from the Editorship of 'THE IBIS.' Still I was loth to give up a duty, in the performance of which I was encouraged by an ever increasing confidence on the part of my fellow ornithologists, until I had discharged it for as long a period as my predecessor, and until I had found a willing successor among the many able contributors to this Journal.

That period is at length arrived; and when I state that Mr. OSBERT SALVIN is about to conduct a Third Series of 'THE IBIS,' I feel that I have no need of any excuse for relinquishing the post I have filled for the space of six years. During that time I have met with kindness and forbearance which I shall never forget, though I am unable duly to express in words my appreciation of it. I can but assure all who have cooperated with me that I am most heartily thankful to them, while I do not doubt that they will continue their valuable support to my successor.

A. N.

Magdalene College, Cambridge.
October 1870.

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* Miscalled on plate "Herphoris."

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ERRATA ET CORRIGENDA.

Page	Line
13,	4 from bottom, for <i>DROMOELA</i> read <i>DROMOLEA</i> .
35,	13, for <i>DEBRII</i> read <i>DABRII</i> .
83,	2, for <i>Heterornis</i> read <i>Heterornis</i> .
88,	2, for <i>Lingsuy</i> read <i>Lingshuy</i> .
111,	2 from bottom, for <i>boucier</i> read <i>bourcier</i> ; and for 141 read 142.
118,	2 from bottom, for <i>XX.</i> read <i>XXI</i> .
124,	16, after <i>We insert</i> are.
128,	15, for <i>June</i> read <i>July</i> .
142,	14, for 325 read 225.
163,	17, for <i>WESTERMANI</i> read <i>WESTERMANI</i> .
259,	1, for <i>Roake</i> read <i>Rocke</i> .
270,	note, for <i>Boustoffen</i> read <i>Bouwstoff</i> .
280,	26, for <i>melanotus</i> read <i>melanotis</i> .
302,	15, for <i>twenty-nine</i> read <i>twenty-eight</i> .
420,	17, for <i>BANKANA</i> read <i>BANKANUS</i> .

THE IBIS.

NEW SERIES.

No. XXI. JANUARY 1870.

I.—*Notes on the Birds of the Peninsula of Sinai.*

By CLAUDE W. WYATT, of the late Sinai Surveying Expedition.

THE feathered inhabitants of the peninsula of Sinai, as might be expected from the nature of the country, are not very numerous, especially in the winter months, during which season most of the birds that form the subject of this paper were obtained; and many of them can only be regarded as accidental or occasional visitors, since of several species I only met with single examples; but as it is a country little known to ornithologists, perhaps a few short notes upon them may not be unacceptable to some of the readers of 'The Ibis,' together with a slight sketch of the route I followed.

On the 11th of November, at 4 o'clock in the morning, I crossed the Red Sea. The moon and stars were shining brightly; not a ripple disturbed the water; the hoisting of the sail was only an excuse for laziness on the part of the sailors, who, at the same time, just dropped their oars into the water, preferring to wait for the breeze, which usually springs up from the north about 6 o'clock, and would in a couple of hours take us down to Ain Musa, where I expected to find the rest of the party, who had started the day before. Very slowly we approached the opposite shore. The beautiful night at last gave way to the early morning, but the sail hung as heavily as when we first started; so we decided upon landing and performing the rest

of our journey, about ten miles, on donkeys, which we had stowed away, in case we should need them, in the bow of the boat. We had not, however, proceeded more than half a mile before the growling of camels showed we were approaching an encampment, which proved to be the one I was in search of, Ain Musa not having been reached the day before.

After breakfast the donkeys were sent back again, and we started on our first day's journey in the desert, making up a goodly retinue of forty-four camels, thirty-three of which carried our luggage and provisions.

For the first three days our course lay between the Tih (a range of mountains which extends across the peninsula) and the sea, over vast rolling plains, generally covered with grit and shingle only, though in some places the dreariness of the road was somewhat relieved by the appearance of a few desert-herbs, and bushes of the "retem" (*Retama retam*), a broom, the juniper-tree of the Bible. Most of the former, however, were dried up and withered. Signs of life were very few and far between. A few lizards dashed across the track in front of our camels; occasionally *Corvus umbrinus* might be seen, a conspicuous object in so featureless a country; two or three Egyptian Vultures (*Neophron percnopterus*) flew over our heads; and at night our camp was always visited by *Motacilla alba*, running about amongst the luggage in a most familiar manner. A journey of three days brought us into Wády Gharandel, where we were to encamp and spend the following day. In one of the neighbouring wádys I met with *Cotyle palustris* and *Saxicola leucocephala*. In Wády Gharandel there are some tamarisks (Arab. "tarfah"), and at the lower end a shallow stream, which never fails, it is said, even in the middle of summer. Here the next day, when I was taking a walk, I flushed a couple of Teal (*Anas crecca*) from amongst the rushes, and a small flock of Pigeons (*Columba schimperi*) flew out of a cliff above us, followed by a Lanner-Falcon (*Falco lanarius*). Higher up the wády there is a colony of *Milvus aegyptius*. The next day we were off again. The character of the country began to change, the wádys became deeper, and mountains appeared in the distance, and the following day we entered the

sandstone region. In Wády Narb, where there are a few acacia trees (*Acacia seyal*), the shittah trees of the Bible, I saw the pretty Blackstart (*Pratincola melanura*) and *Phyllopneuste trochilus*. At the foot of Sarbút-el-Khádém we first met with *Caccabis heyi*, which is only found amongst the mountains: they proved to be very fat and good eating; in fact, this and the other Partridge (*Caccabis saxatilis*) are the only fat things in the Peninsula. The greatest part of our journey now lay up the Wádys Khamíleh, Barg, Beráh, and Esh Sheikh. The bare rocky mountains, which completely shut in the wádys on both sides, though they do not often rise perpendicularly, became higher and higher as we proceeded southwards. In some places in Wády Esh Sheikh the tamarisk abounds; and it seemed as if it ought to be rather a likely place for birds, though we only noticed *Ruticilla tithys* and *Ammomanes deserti*. The latter was abundant.

On arriving at Sinai, after we had paid a visit to the monks at the convent, we pitched our tents in the valley below, about 4900 feet above the sea, at the foot of Rás Susáfah, which towered up above us nearly 2000 feet. The mornings were now getting very cold, and the shattered appearance of *Cynthia cardui* showed the approach of winter in these high regions. The thermometer descended below the freezing-point most mornings, and before another month had passed we had had 10 degrees of frost. Snow was to be seen on the tops of the mountains; and on one occasion the ground around our camp was quite covered with it in the early morning, though it soon yielded to the heat of the sun. Few insects were to be seen; and all the herbs and plants, from the seeds of which many of the feathered race obtain a sustenance, were leafless.

Birds of prey were very scarce, not only here but all over the Peninsula. Occasionally I saw *Neophron percnopterus*. I observed also *Aquila bonellii* two or three times soaring along the mountain-side, always, however, out of gunshot. *Tinnunculus alaudarius* passed over our tents on one occasion, and *Falco lanarius* I saw twice in the neighbouring wádys. The Rev. F. W. Holland shot *Athene persica* on the plain of Er Ráhab one evening. Its crop was found to be full of ants. It is con-

sidered by the Arabs to be a bird of ill omen, the reverse of what it is in Palestine (*vide* Ibis, 1865, p. 261). It is certainly a scarce bird in the desert. We only met with it three times while we were there. The Arabs told us that they use the flesh when they are ill as a sort of charm. They put it into the fire and inhale the smoke*. When we first arrived, a flock of *Corvus umbrinus* was to be seen most mornings in the neighbourhood of our camp. They were very shy, and I was not at that time able to get a specimen; and though I tried to trap them, they were too wary, managing to take the bait without being caught. After a few days they all disappeared; and I did not meet with them again till we were on lower ground. On two occasions I saw on the plain of Er Ráhah flocks of a larger Raven, probably *Corvus corax*. Of the two Partridges, *Cuccabis heyi* and *C. saxatilis*, the former was by far the most abundant, and was generally to be met with in large coveys, running up the mountain-side at a great pace, and creeping under the rocks and boulders. They feed upon the seeds and buds of various herbs and plants; but their favourite food seems to be the seed of the shíah, the crops of those I shot being generally found to be full of it. *C. saxatilis* we did not often meet with. It is much more restricted in its habitat, keeping to the higher wádys. There are more, I think, in Wády T'láh than elsewhere. Its food is the same as that of *C. heyi*. *Motacilla alba* and *Ammomanes deserti* were generally to be seen within the precincts of our camp; the latter also frequented the plain of Er Ráhah in large flocks, and was the commonest bird we had. Three Chats were to be found on this plain—*Dromolæa leucocephala* and *D. leucopygia*, both equally plentiful, and *Saxicola lugens* (Licht.). In Wády T'láh, the warmest wády in the neighbourhood, the monks have a few fruit-trees, pomegranate, apricot, and so forth, which grow almost in a wild state. There are also a few palms. On the top of one of these one morning I saw, as I was standing under it, a pair of *Amydrus tristrami* alight. They were uttering cries something like that of the Common Starling, though when this bird is

* [Another curious instance of the use in India of Owls' flesh as medicine has been recorded by Mr. Malan (Zoologist, 1848, p. 2141).—Ed.]

really singing, as I have since heard him in Wády Feirán and amongst the clefts of Petra, I think I never heard a more beautiful songster. Every morning, as soon as the sun rose up, the plain of Er Ráhah was enlivened by the presence of *Drymæca eremita*, hopping about among the herbs and plants; and some cold mornings they were so tame that it seemed as if they might almost be caught in a butterfly-net. The way in which they dropped their wings and cocked their tails reminded me of the Wren of our own gardens and woodlands. This little bird is truly an inhabitant of the wild and desolate, having its home amongst the bare mountains of the Sinaitic peninsula, as well as at Petra, where it is not uncommon, creeping amongst the retem-bushes that now grow among the ruins and mounds of rubbish, and in the ravines in the neighbourhood of the Dead Sea, where it was first discovered by Mr. Tristram a few years since (*Ibis*, 1867, p. 76). *Ruticilla tithys* was not uncommon—or rather the cock bird, for I only once saw the hen; but lower down the mountain the sexes seemed to be equally distributed. Of *Fringillidæ* we found two species, *Serinus hortulorum* and *Carpodacus sinaiticus*. The former was scarce; but the latter was generally to be found on the plain of Er Ráhah, and in the neighbouring wádys, feeding on the seeds of the shíah and other plants.

On New Year's Day our camp was struck, and we proceeded down the pass of Nubk-el-Hawy on foot, while the camels with our luggage went round by Wády Esh Sheikh. By the pass we entered Wády Soláf, down which we travelled until we reached Wády Feirán, making altogether a three days' journey, and, descending some 2800 feet into a much warmer climate, all real cold was left behind, though it was still chilly in the early morning.

The oasis of Feirán, at the lower end of which we pitched our tents, is shut in by lofty mountains. Palm-trees extend for a couple of miles up the wády, intermingled with the nebuk (*Rhamnus nabeca*) and tamarisk. Not far from our tents there was a small stream, which, after running a short distance, lost itself in the bed of the wády. On all sides were to be seen the uprooted palms prostrated by the "scil" or flood of last year.

This seemed to be a likely place for birds. They were not, however, so plentiful as I had expected, though I found some species that did not occur in the higher regions, while most of those that did occur there were still to be found here, though generally in smaller numbers. The Bulbul (*Iæus xanthopygius*) was very abundant and tame. I sometimes saw as many as a dozen in the same tree near a certain well. They seemed to be very fond of the fruit of the nebuk, which was just ripe. They might often be seen hanging to the boughs, looking like large Titmice, and as if they were trying, if possible, to belie their relationship to the *Turdidæ*. *Amydrus tristrami* was not uncommon, the two patches on his wings shining like gold in the sunshine as he passed over our heads, very different from the dull russet hue of the cabinet specimen. *Phyllopneuste trochilus* and *P. rufa* found it warm enough for their winter quarters, and *Cyanecula suecica* and *Sylvia melanocephala* were occasionally to be seen amongst the tamarisks near the stream. *Pratincola melanura* was the commonest and the boldest species we had here; and often, when I was skinning the birds we had shot, one would come and perch on a tamarisk tree within a yard of my head. *Phasmoptynx capensis* we only obtained once. One of our men was at work among the ruins of Feirán, when he saw this Owl looking out of a hole in the wall. He immediately shut him in by closing the hole with a stone, and he was afterwards captured; but, as he refused all food, the following day we killed him. In Wádys Aleiyát and Ajeléh the shittim-tree grows in considerable numbers, but always singly; so they do not afford much cover to birds. At El Hessul, a small oasis, about a mile from the oasis of Feirán, *Passer salicarius* was not uncommon, and seems to be the only Sparrow that occurs in the peninsula. *Columba schimperi* we now and then met with, but it could not be called common. Mr. Holland said they had been more numerous last year. About the beginning of February, I went down to the sea-coast, a fortnight in advance of the rest of our party, taking with me two Arabs, while a couple of Camels carried my luggage. We proceeded up Wády Soláf, stopping for the night where Wády Hebrán joins it; and a cold night it was. When

I got up the following morning, I found the water in a basin beside me frozen. We descended Wády Hebrán nearly the whole of the next day, getting into a much warmer climate, and about 5 o'clock we stopped again under some palms by a little purling stream. Here, after I had gone to bed, I heard the "Hood-hood" of the Arabs. It went up the wády, and, judging by the sound, it must have passed close to me. I was sleeping in the open air, yet I did not see anything of it. The Arabs say it is an evil spirit, and that they never saw it. I heard it perhaps half a dozen times while I was in the Peninsula, and have fired a gun in the direction from which the sound came, in hopes, if it proceeded from an Owl, of putting him up. However, I never saw anything. Could it be the hoot of *Phasmoptynx capensis*? At the lower end of the wády, a fine rocky gorge, I saw a fine specimen of Bonelli's Eagle, perched on a lofty crag, but could not get a shot at it. By the stream I found *Motacilla sulphurea*. On the third day we crossed the arid gravelly plain of El Gaa, which extends along the western coast between the mountains and the sea. I spent altogether the best part of four days upon it, in hopes of falling in with Sand-Grouse, but all I saw of them was the mark of their feet on the ground. My Arabs said that four birds passed over my tent one morning while I was at breakfast. Near the embouchure of Wády Hebrán, where there are some thick stunted bushes, I shot a pair of Marmora's Warbler (*Sylvia sarda*), but unfortunately lost both of them in the bushes. They were only winged. I was, however, close enough to identify them, as, in trying to catch them, my hand was often within a foot of them. The beautiful red ring round the eye I saw very distinctly. I visited the same spot the next day; but I never met with the bird again. *Lanius excubitor* was not uncommon here, sitting on the top of the seyal-trees, on the look-out for desert-beetles. A seven hours' tramp over the plain of El Gaa brought me within three miles of Tor. I had my tent pitched on some high ground above the marshes, not far from the palm-groves which belong to the monks of the Convent. In front of Tor, which consists of a few huts inhabited chiefly by fishing Arabs, there is a small bay. The marshes, which are not of any great

extent, were for the most part dry, so that I could get about without any difficulty to visit the salt-ponds amongst them. These generally abounded in minnows, as also did the small stream which runs down through the marshes to the sea. The tamarisk grows on the upper parts; and a stunted thorny bush, which grows upon the sandhills, takes its place as you approach the sea.

I had now got into a much warmer climate, very different from the bracing air of the mountains. Very few of those birds which inhabit the mountain district occur here. The plain of El Gaa, on the borders of which my tent was pitched, was, as I have before said, almost destitute of birds; and my attention was chiefly confined to the marshes and the sea-shore, as the palm-grove proved little better than the plain. The only reason I can assign for this absence of the feathered race is the exposure of the trees to high winds, which blow constantly off the sea, and perhaps the want of other vegetation. Palms growing alone, are not, I think, a very favourite resort of birds.

The first bird I saw upon the marshes was *Alcedo ispida*. I just caught sight of his blue back as he darted from under a high bank over one of the salt-ponds, when he was immediately lost to view. For three mornings successively he did this before I was able to get a shot at him. I did not see this bird again until I was at Akabah, which is situated at the head of the gulf of the same name; but on the eastern shore, and thus just out of the Peninsula, it is common, and may be generally seen sitting on the stones in the still waters, when disturbed flying up into the palm-grove, which comes down within a few yards of the sea. Of the Chats, *Saxicola monacha* was the only species that was abundant, and was chiefly confined to one part of the marshes and sandhills, where the samphire grew, on the top of which they used to perch. Cock birds were more plentiful than hens. *S. lugens* I saw now and then and shot, in order to satisfy myself it was not *S. libanotica*. Of *S. deserti* I obtained a pair. *Calandrella deserti* and *Anthus spinoletta* were both common, the former frequenting the sides of the stream in large flocks, the latter running along the sides of the salt-ponds. *Galerita arenicola* was to be seen occasionally in small

flocks, and *Sylvia doriae* was not uncommon, frequenting the same spot as *Saxicola monacha*. A few flocks of Sand-Grouse (*Pterocles coronatus*) visited the marshes, probably to drink, in the early morning. On two occasions I saw the whole flock alight in the middle of the stream, where the water was hardly an inch deep; but they were off again before I could stalk them. In the bay, in front of Tor, there were generally some Gulls; but they were very shy, and, as there was no covert, there was no means of getting at them—though I managed to obtain an example of *Larus gelastes* as I was one day returning along the shore from Jebel Nagus, which, having fallen into the water, was retrieved by a passing Bedawy, regardless of the Sharks, which abound along this coast. Through my glass I was able to distinguish *Chroicocephalus ridibundus* and *C. melanocephalus*.

Towards the end of February I again ascended the mountains, after an absence of more than three weeks. There seemed to have been more change in the flora than in the birds, the retem and several desert-plants being in full blossom. *Cotyle palustris*, however, had found his way up as far as Wádys Soláf and Feirán; and on the following day I shot our Common Martin (*Chelidon urbica*), which had probably wandered somewhat out of its usual course, as this was the only occasion on which I met with it amongst the mountains. After I had spent a few days at Wády Feirán, during which time I obtained *Lanius auriculatus* and *Saxicola eurymelana*, both evidently just arrived, I started for a three weeks' trip to the mining-districts of Maghara and Sarbút-el-Khádem, thence by Wády Babá to the coast. At the Hammam bluff we turned southward again to Sarbút-el-Jemel, and descended to the plain of Er Ramleh, which extends along the base of the Tîh mountains. Along this plain we travelled until we again ascended the mountains. There are no running streams in this part of the peninsula; but many of the wádys were bright and green from the effects of the winter rains. Hovering over a retem bush in full blossom, in a small wády at the foot of Sarbút-el-Khádem, I first met with *Sylvia bonellii*. In Wády Babá there is a good deal of vegetation, palms and shittim-trees. I did not, however, find any birds I had not before met with

amongst them. In Wády Hamr I obtained *Sylvia rueppelli*, which was not uncommon amongst the retem-bushes.

We reached the Convent valley again on March 25th. I found *Saxicola ænanthe* had made his appearance on the plain of Er Rábah during our absence, as well as *S. amphileuca*. On the 30th, *Anthus campestris* arrived.

On the 2nd of April I started for Akabah, and proceeded by Wadys Sa'l, Hudherah, and El 'Ain to the sea-shore. On the way down, I fell in with a few of our common spring visitors—the Redstart, Cuckoo, and Yellow Wagtail, the latter accompanying us the greater part of a day, running round the legs of our camels. At El Noweyba, where there are some palm-trees and bushes growing close to the water, I found *Budytes flavus*, var. *cinereocapillus*, Savi, *Merops persica*, and *Hirundo domestica*.

Our road now lay for the rest of the journey along the shore, close to the blue waters of the Gulf of Akabah. A more quiet, lifeless, and desolate scene could hardly be imagined. Not even a Gull was to be seen, until we got near the head of the gulf: half-a-dozen Swallows, just arrived, a pair of *Tringoides hypoleucus*, and the Grey-headed Wagtail were all the birds we saw during a forty-miles' ride. On reaching the Arabah, a vast wády separating the desert of the Tih from the mountains of Edom, at the head of the Gulf, we were out of the peninsula of Sinai.

I afterwards went to Petra, by Wady Ithm and along the highlands of Edom. I much regret I could not make a stay and collect in this interesting region. Judging from what I saw from the back of a camel, its ornithology differs very much from that of the peninsula, partaking rather of that of the "South Country" of Palestine.

In the following list those species which are marked with an asterisk were obtained by Mr. Holland, during former visits to the peninsula.

**GYPS FULVUS* (Gmelin). Griffon Vulture.

I never saw either the Griffon or Læmmergeyer while I was in the peninsula; the former, however, has been observed by Mr. Holland, on a former visit, feeding upon a dead camel near Akabah.

NEOPHRON PERCNOPTERUS (Linn.). Egyptian Vulture. Arab.
"Rakhamah."

Generally distributed, but not very common.

AQUILA BONELLII (Temminck). Bonelli's Eagle.

Seen occasionally, in the mountainous parts of the peninsula.

*BUTEO FEROX (S. G. Gmelin). Long-legged Buzzard.

Wády Gharandel.

MILVUS MIGRANS (Bodd.). Black Kite.

I expect this bird is a spring visitant to the peninsula: on the 1st April, when I was on the top of Jebel Katherina, I observed a great many Kites wheeling round, far overhead; I have no doubt but they were of this species, which I found in abundance the following week on the highlands of Edom, and at Petra. Isaiah (ch. xxxiv. ver. 15), foretelling the desolation of Edom, probably refers to this bird—"There shall the vultures also be gathered, every one with her mate;" for the identity of the Hebrew "Dayah," translated "Vulture," in our version of the Bible, with the Arabic "H'dayah," has been pointed out by Mr. Tristram (Nat. Hist. of the Bible, p. 181).

MILVUS ÆGYPTIUS (Daud.) Egyptian Kite.

Occurs at Wády Gharandel.

FALCO LANARIUS (Linn.). Lanner-Falcon.

Seen a few times—at Wády Feirán, Wády Gharandel, and other places.

TINNUNCULUS ALAUDARIUS (G. R. Gray). Kestrel.

Generally distributed, but nowhere abundant.

PHASMOPTYNX CAPENSIS (A. Smith).

Obtained once in Wády Feirán. *Bubo ascalaphus* we never met with; and, as far as I could find out, the Arabs do not know it.

ATHENE PERSICA (Vieillot). Southern Little Owl.

Scarce; we only met with it three times; and I never heard its note at night while in the desert.

CUCULUS CANORUS (Linn.). Common Cuckoo.

I saw the Cuckoo twice in Wády Hudherah, April 4th and

5th. It was common enough along the highlands of Edom a few days later.

MEROPS APIASTER, Linn. European Bee-eater.

I saw one of these birds at El Noweyba, by the Gulf of Akabah, on April 6th. It had probably just arrived; three days later I found it in abundance at Akabah.

ALCEDO ISPIDA, Linn. Kingfisher.

I obtained this bird once on the marshes near Tor—the only occasion on which I met with it whilst in the peninsula.

UPUPA EOPS, Linn. Hoopoe.

The Hoopoe is well known to the Arabs; it is a spring visitant, but had not arrived before I left.

CYPSELUS AFFINIS, J. E. Gray. Galilæan Swift.

I have no doubt but I saw this bird in Wady 'Ain, April 6th; but unfortunately I was unable to obtain a specimen in the short time we stayed there.

HIRUNDO RIOCOURI, Audouin. Cairene Swallow.

A single bird of this species passed us, while we were at luncheon, in Wády Ureit. Its dark breast is not easily mistaken.

HIRUNDO RUSTICA, Linn. Chimney-Swallow.

The first one I saw was on April 6th, by the Gulf of Akabah; on the two following days I saw several.

CHELIDON URBICA (Linn.). House-Martin.

I met with a few of these birds in Wády Wisset, March 16th; it was the only place where I saw them, with the exception of a single bird I shot in Wády Feirán.

COTYLE PALUSTRIS (Steph.). Marsh-Martin.

Resident and abundant on the coast during the winter; it ascends the mountains as the spring advances, and first made its appearance at Wády Feirán about Feb. 27th. I never met with its congener *C. rupestris* in the peninsula; but on the highlands of Edom I found them flying about together.

LANIUS EXCUBITOR, Linn. Great Grey Shrike.

Common on the plain of El Gaa where there are any shittim-

trees; I also found it near Wády Mokatteb and Sarbút-el-Khádem, in March.

LANIUS AURICULATUS, P. L. S. Müller. Woodchat.

Obtained once at the oasis of Feirán, March 1st.

LANIUS COLLURIO, Linn. Red-backed Shrike.

I picked up a dead specimen of this species, April 1st, in Wády Lejah. It was evidently a last year's bird. The dryness of the air would account for its preservation. *L. nubicus* is probably a spring visitant to the Peninsula. I shot it at Akabah on 11th April.

IXUS XANTHOPYGIUS (Hempr. & Ehrenb.). Arab. "Andalib."

Occurs only in the oasis of Feirán, where it is very common.

SAXICOLA GENANTHE (Linn.). Wheatear.

A spring visitant. Towards the end of March it was to be seen everywhere. The hen bird arrived a few days before the cock.

SAXICOLA DESERTI, Rüpp. Desert-Chat.

I shot a pair of these Chats near Tor.

SAXICOLA EURYMELÆNA, Hempr. & Ehrenb.

I shot a single specimen of this species in Wády Aleiyát, March 1st. It was probably passing on its way to other countries, as I never met with it again. It arrives in Palestine in March (Ibis 1867, p. 95).

SAXICOLA AMPHILEUCA, Hempr. & Ehrenb.

A spring visitant. First noticed March 29th.

SAXICOLA LUGENS, Licht. Mourning Chat.

The only Chat that is universally distributed, occurring everywhere, from the highest mountain-regions to the sea-shore.

DROMOLÆA LEUCOPYGIA, A. E. Brehm. White-rumped Chat.

Common everywhere throughout the mountain district.

DROMOLÆA LEUCOCEPHALA, A. E. Brehm. White-headed Chat.
Arab. "Bagáa."

As common as the last-mentioned species, and frequents the same localities.

DROMOLÆA MONACHA (Rüpp.).

I only met with this Chat on the marshes and amongst the sandhills near Tor, where it occurs in abundance.

**PRATINCOLA RUBICOLA* (Linn.). Stonechat.

Wády Lapata.

PRATINCOLA MELANURA (Rüpp.). Blackstart.

This bird is very common from the lower parts of the mountains, as far up as Wády Feirán, above which I never saw it.

RUTICILLA TITHYS (Scopoli). Black Redstart.

Tolerably common in the mountain district.

RUTICILLA PHÆNICURA (Linn.). Common Redstart.

Observed once in Wády Sa'l, April 4th.

CYANECULA SUECICA (Linn.). Bluethroat.

Occurs at Wády Feirán, but is not common.

SYLVIA CAPISTRATA (Rüpp.). Rüppell's Warbler.

A spring visitant, first seen March 10th. Not uncommon near Sarbút-el-Khádem and in Wády Hamr, amongst the retem bushes. Two of my specimens have black legs, while in the others the legs are of a light colour.

**SYLVIA DESERTI*, Tristram.

Wády Lehala.

SYLVIA MELANOCEPHALA (Gmel.). Sardinian Warbler.

I only met with this bird in the oasis of Feirán, where it frequents the tamarisks.

SYLVIA SARDA (Marm.). Marmora's Warbler.

This bird, as I have before said, I met with at the embouchure of Wády Hebrán; I saw it so plainly as to leave no doubt as to its identity.

SYLVIA DORIÆ, De Filippi. Doria's Warbler.

Not uncommon on the salt-marshes near Tor.

PHYLLOPNEUSTE TROCHILUS (Linn.). Willow-Wren.

Common everywhere where there is any vegetation, except in the higher parts of the mountains; I never saw it at a greater altitude than Wády Feirán.

PHYLLOPNEUSTE RUFA (Latham). Chiffchaff.

Found in the same localities as the preceding species, and is equally abundant.

PHYLLOPNEUSTE BONELLII (Vieillot). Bonelli's Warbler.

A spring visitant, first observed March 10th. Frequents the retem-bushes to catch the insects that are attracted by the bloom.

DRYMOECA EREMITA (Tristram). Hermit Warbler.

Inhabits the mountainous parts of the Peninsula; it is very common on the plain of Er Ráhal, and in the wádys in the neighbourhood of Jebel Musa; also occurs among the lower parts of the mountains, but not so abundantly. It seems, in fact, to appear in greater numbers as the elevation increases.

MOTACILLA ALBA, Linn. White Wagtail.

Common, and of universal distribution.

MOTACILLA FLAVA, Linn. Yellow Wagtail.

Observed once, April 4th, in Wády Sa'l.

MOTACILLA SULPHUREA, Bechstein. Grey Wagtail.

I met with a pair of these birds, at the lower end of Wády Hebrán, where there is a stream of water.

BUDYTES FLAVUS (L.), var. *cinereo-capillus*, Savi.

Not uncommon on the shore of the Gulf of Akaba.

ANTHUS CAMPESTRIS (Bechstein). Tawny Pipit.

A spring visitant.

ANTHUS SPINOLETTA (Linn.). Water-Pipit.

Frequents the sides of the salt-ponds, near Tor.

*CERTHILAUDA DESERTORUM (Stanley). Bifasciated Lark.

Ain Musa.

GALERITA ARENICOLA, Tristram.

Occasionally met with in small flocks of 5 or 6, on the marshes near Tor.

AMMOMANES DESERTI (Licht.).

Very common amongst the higher parts of the mountains, less abundant lower down.

CALANDRELLA DESERTI, Tristram, Ibis, 1859, p. 58.

Large flocks of these birds frequent the sides of the stream which runs through the marshes near Tor.

CARPODACUS SINAITICUS (Licht.). Sinaitic Grosbeak.

Local; frequenting the higher parts of the mountains, the plain of Er Ráhah, and Wádys Lejah and T'láh. I also met with it in Wády Aleiyát at the foot of Mount Serbal.

FRINGILLA CŒLEBS, Linn. Chaffinch.

I shot this bird in Wády Feirán.

SERINUS HORTULORUM, Koch. Serin-Finch.

Occurs on the plain of Er Ráhah; not common.

PASSER SALICARIUS, Vieillot. Spanish Sparrow.

Only found in the oases in Wády Feirán.

CORVUS UMBRINUS (Hedenborg). Brown-necked Raven. Arab. "Ghorab."

Common, and universally distributed. *C. corax* I believe I saw on the plain of Er Ráhah, and *C. affinis* on that of El Gaa on one occasion. I recognized the latter from Mr. Tristram's figure of it (Ibis, 1866, p. 72).

AMYDRUS TRISTRAMI, Selater. Russet-winged Starling.

Wády Feirán, common.

COLUMBA SCHIMPERI, Bonaparte. Schimper's Pigeon.

Occasionally met with in Wády Feirán, Wády Gharandel, and other places.

PTEROCLES CORONATUS, Licht. Arab. "Gatá."

This is the only species of Sand-grouse which came under my observation. They frequent the plain of El Gaa, and the marshes near Tor. They are very shy and difficult to approach.

CACCABIS SAXATILIS. Rock-Partridge. Arab. "Shinar."

Frequents the highest parts of the mountains in the neighbourhood of Jebel Musa; it also occurs near Serbal, I believe, though I never met with it there myself. I found it much more common on the highlands of Edom and at Petra than in the Peninsula.

CACCABIS HEYI. Hey's Partridge. Arab. "Hajjal."

More common than the preceding species, and generally distributed amongst the mountains.

**COTURNIX COMMUNIS* (Bonnaterre). Quail.

Mr. Holland, in 1861, shot two or three Quails at Wády Gharandel, and by Wády el Akhti. From what Mr. E. H. Palmer could find out, the Arabs seem to know the bird, and call it "Summanch," which comes from the same root as "salwa."

ÆGIALITIS LESCHENAULTI, Lesson.

I found this Plover running, in large flocks, amongst the sandhills by the bay near Tor; I also met with single birds along the shore.

ÆGIALITIS FLUVIATILIS (Bechstein). Little Ringed Plover.
Shot once amongst the marshes near Tor.

**VANELLUS GREGARIUS* (Pallas).

Plain of Er Ráhah.

MACHETES PUGNAX (Linn.). Ruff.

I shot a female once near Tor.

TOTANUS GLOTTIS (Linn.). Greenshank.

TOTANUS OCHROPUS (Linn.). Green Sandpiper.

TRINGA MINUTA (Leisler). Little Stint.

I obtained specimens of this and the two preceding species on the marshes near Tor.

TRINGOIDES HYPOLEUCUS (Linn.). Common Sandpiper.

Common on the seashore.

GRUS CINEREA, Bechst. Common Crane.

When I was at Tor, in February, I saw single birds on the marshes most days.

<i>ANAS CRECCA</i> , Linn. Teal.	} Wády Gharandel.
* <i>ANAS ACUTA</i> , Linn. Pintail.	

**MERGUS SERRATOR*, Linn. Red-breasted Merganser.

Ain Musa.

CICONIA ALBA, Bechst. White Stork. Arab. "Nájeh."

I did not see this bird myself; but Captain Palmer, R.E., saw a large flight of birds, which I have no doubt were of this species, in Wády Feirán, March 5th. Mr. E. H. Palmer also saw a flight. "Nájeh" means literally, "a white sheep."

**EGRETta GARZETTA*, Linn. Little Egret.

Shore of the Gulf of Akabah.

PHALACROCORAX CARBO (L.). Common Cormorant.

Very common in the bay near Tor, and along the coast of the Red Sea.

LARUS GELASTES, Licht. Slender-billed Gull.

This Gull is common in the bay at Tor.

CHROICOCEPHALUS RIDIBUNDUS (L.). Black-headed Gull.

CHROICOCEPHALUS MELANOCEPHALUS (Natterer).

I was able, through my glass, to distinguish both this and the preceding species, which were both common in the bay at Tor.

II.—On the Sun-birds of the Indian and Australian Regions*.

By ARTHUR Viscount WALDEN, P.Z.S. &c.

(Plate I.)

ALL those Sun-birds which are not found in the Ethiopian region form the subject-matter of this paper. The geographical range of the group extends, on the mainland of Asia, from the mouth of the Indus, in the west, to the shores of the Chinese Sea in the east. It includes, besides Ceylon, nearly all, if not all, the islands of the Indo-Malayan and Austro-Malayan subregions. Its most northern and north-western limit is reached in the neighbourhood of Kotegurgh, on the Sutlej, and its most south-

* The term "Indian Region" is here used in a purely geographical sense. As a zoogeographical expression, I find difficulty in recognizing its value; for the avifauna of continental Asia, south of the middle range of the Himalaya and of its eastern extensions, may be roughly said to consist of two distinct groups of birds—the one inhabitants of the mountains and their slopes, the other inhabitants of the plains. The first, in whatever part of India proper they occur, are allied to Indo-Malayan forms: the last are closely connected with African species or genera.

ern in the colony of Queensland. The only large islands within this area where no Sun-birds have as yet been discovered, are the Indo-Malayan island of Formosa and the Austro-Malayan islands of New Britain and of the Salomans.

The total number of species is about forty, and they are divisible into three natural genera (*Arachnechthra*, *Æthopyga*, *Chalcostetha*) and two smaller groups, among the members of which the affinities are not so evident (*Nectarophila* and *Anthreptes*). *Arachnechthra* is the most largely diffused, contains the greatest number of species, many nearly allied, but well defined, includes the most widely spread of all the Eastern Sun-birds, *A. asiatica*, and is generically the most closely connected with the Ethiopian *Nectariniæ*, through *Cinnyris osea*, Bp., a species I am strongly inclined to consider congeneric. Being a dominant group, we find it universal in the distribution of its members. Besides occurring in Ceylon, in India, and in the Indo-Chinese countries, they are spread throughout the two subregions Mr. Wallace has so well defined, the Indo-Malayan and Austro-Malayan, and overlap the range of all the other genera. *Arachnechthra* is represented in Sindh, as well as in New Guinea, in Ceylon, in Queensland, in the Philippines, and in the Sunda Islands. *Æthopyga* is confined to a more restricted range. It is typical of the Indo-Malayan subregion, in which I comprise the lower Himalayan ranges and their Terai, from western Nipaul to the bend of the Sampo, the mountainous regions to the east and south-eastward of that river, and of India generally, as well as the countries of Assam, Sylhet, Aracan, and Tenasserim. One species has found its way to, or has been left behind in, the highland jungles of Central and Western India; and another is to be met with beyond the Indo-Malayan frontier, in Celebes. In Ceylon the group is unrepresented. *Chalcostetha*, with one exception, is a purely Austro-Malayan genus, the exception, *C. insignis* (Jard.), an Indo-Malayan form, presenting affinities in several directions. The genus *Anthreptes* consists of one species, which perhaps ought not to be separated from *Nectarophila*. It occupies almost the entire Indo-Malayan area, and passes over into Celebes and the Sula Islands. In *Nectarophila* we find two

Indian and two Indo-Malayan forms, the two Indian, *N. zeylonica* and *N. minima*, being nearly related, one Indo-Malayan, *N. brasiliensis*, showing affinities to *Chalcostetha*, a fourth, *N. sperata*, being perhaps a Philippine representative of *N. zeylonica*, and the fifth, *N. grayi*, representing *N. brasiliensis* in the Island of Celebes.

The Indo-Malayan subregion is the richest in species; and the greatest number are to be found concentrated in the island of Sumatra, the metropolis also of *Arachnothera*. In the plains and lowlands of India proper only three or four species occur. Ten or eleven specific forms are peculiar to the Australian region, including two Indo-Malayan generic forms, besides which two Indo-Malayan species have partially invaded its frontier. The remaining *Nectariniæ* all belong to the Indo-Malayan subregion, as I extend it. After Sumatra, which possesses nine, comes Java with seven, and Borneo with five or six species; while the Malay peninsula seems equally rich with Sumatra, if authors are exact in the habitats they assign. Ceylon possesses four, the same number and the same species as are found in Southern India. A few species more than I shall enumerate occur in our books, but have not been since recognized. The majority of them are either described from manufactured specimens, or else are badly described species belonging to other groups such as *Trochilus*. One, if not two, seem to be *bonâ fide* species, as, for instance, *Cinnyris leucogaster*, Vieill., from Timor. Some species perhaps still remain to be discovered in the interior of Borneo, in New Guinea and its islands, in the Philippines, and in the mountainous districts of Siam and Cochin China; yet the materials we already possess are sufficiently extensive to permit of generalization, while the nomenclature of the species known is in a state of confusion which will justify, I trust, this imperfect attempt to introduce order.

1. ARACHNECHTHRA ASIATICA, (Lath.), Ind. Orn. i. p. 288, no. 22, "India," ♂ adult. (1790), descr. orig.

? *Certhia cirrhata*, Lath., tom. cit. p. 299, no. 62, "Bengala" (1790), ex Lath. Synop. Suppl. i. p. 132, no. 57, descr. orig.

C. chrysoptera, Lath., tom. cit. p. 299, no. 64, "Bengala"

(1790), ex Lath. Synop. Suppl. i. p. 133, no. 59, descr. orig.

C. mahrattensis, Lath., Ind. Orn. Suppl. p. 36, no. 3, "India" (1801), ex Lath. Synop. ii. p. 164, no. 20, "Mahratta country," descr. orig.

C. saccharina, Shaw, Gen. Zool. viii. i. p. 258 (1811), ex Lath., nec *Cinnyris saccarhina*, Steph. *op. cit.* xiv. p. 233.

Purple Indian Creeper, Edwards, Gleanings, ii. p. 116, t. 265, fig. inf., descr. orig.

Violet-breasted Creeper, var. B, Lath., Gen. Hist. iv. p. 248, no. 41, ex Edwards.

Le Souï-manga violet, Audeb. & Vieill.*, Ois. Dor. ii. p. 31, t. 12, ♂ adult. "Malabar," descr. orig.

Cinnyris iodeus, Less., Dict. Sc. Nat. l. p. 24 (1827), ex Audeb. & Vieill. t. 12.

Certhia nitens, Hermann, Obs. Zool. p. 137, ♂ adult. "Tranquebaria" (1804), descr. orig.

Le Souï-manga à cravate bleue, Audeb. & Vieill., Ois. Dor. ii. p. 53, t. 31; patr. non indic. ♂ adolese.

Cinnyris cyaneus, Vieill., Enc. Méthod. Orn. p. 599, no. 56 (1823), descr. orig.

C. orientalis, Frankl., P. Z. S. 1831, p. 122, no. 105, ♂ adult. "India centr.," descr. orig.

C. currucaria (L.), Sykes, P. Z. S. 1832, p. 98, no. 133, "Poona."

C. epauletta, Hodgs., Ind. Rev. ii. p. 272, ♂ adult. "Nipaul" (1837), descr. orig.

C. strigula, Hodgs., l. c. "Nipaul" (1837), descr. orig.

Nectarinia mahrattensis, (Lath.), Jard., Nat. Lib. xli. pp. 222, 264, t. 24, ♂ adult. "India."

Arachnechthra currucaria, (L.), Cab. Mus. Hein. i. no. 572; Blyth, Ibis, 1866, p. 364, no. 234, nec Linn.

Eastern Creeper, part., Lath., Gen. Hist. iv. p. 232, no. 21, "India."

Hab. Throughout all India, the greater part of the west of Central India, the North-west Provinces, Sindh, North Burmah, top of the Neilgherries (Jerdon); Ceylon (Layard); Nipaul

* The folio edition is quoted.

(Hodgs.); Kotegurgh in winter, Rampoor (Stoliczka); Maunbhoom (Beavan); Almorah (Brooks); Candeish (Mus. nostr.); Arracan, Calcutta (Blyth).

The extreme western and eastern limits of this dominant species have not been as yet determined. When not in nuptial dress the males cast off all the black body-feathers except those on the mesial line. On this subject, which has given rise to much speculation, Mr. Blyth's statement (Journ. Asiat. Soc. Beng. xii. p. 978) that the females, when breeding, assume the full dress of the male, has been denied by Capt. Beavan (Ibis, 1865, p. 416). An individual, either of this species or else of some as yet unrecognized *Arachnechthra*, in the non-breeding plumage just described, formed the subject of Brisson's *Certhia philippensis grisea* (Orn. iii. p. 615, t. xxx. f. 3). It cannot have been an example of *A. lotenia*; for the length of the bill is stated to have been 9 lines. Nor can it have belonged to any of the other known *Arachnechthra*, because the wing-coverts of Brisson's bird were of a polished steel-violet colour. The type-specimen, according to Brisson, was sent to M. Aubry from the Philippines. No binomial title has ever been given to Brisson's species; but, most unfortunately, Linnæus added Brisson's title* as a synonym to his *Certhia currucaria*, the name he bestowed on a female or young male of either *Nectarophila zeylonica* or else of *A. asiatica*. Linnæus's type was given to him by Governor Loten, who procured it in Ceylon. Thus runs the diagnosis:—" *C. olivacea, subtus flavescens*," &c.; and then "*subtus a gula ad anum flavescens*" is added. No mention is made of the central dark stripe, nor of metallic wing-coverts. Brisson's description therefore can in no way help us to determine the true *C. currucaria*, L.; yet every author, from Montbeillard down to the present time, has so used it. The word *currucaria* has even come to be an ornithological term; for we find, in the 'Birds of India,' Dr. Jerdon using this

* Linnæus omitted the word "*grisea*," which makes Brisson's title read *C. philippensis*, a different species, on which Linnæus founded his *C. philippina*. Linnæus, however, quoted the page, plate, and figure correctly; yet he added the number 2, the number of the figure which represents *C. philippensis* on the same plate with *C. philippensis grisea*. This does not alter the main fact that the Linnæan diagnosis of *C. currucaria* was original.

phrase (i. p. 372),—"a specimen has the *currucaria* or winter plumage of the last." The Linnæan description agrees best with the female of *N. zeylonica*; and to that species I have referred *C. currucaria*. Gmelin's diagnosis is a reprint of that of Linnæus; but in his additional remarks he copies from Brisson. Latham (Ind. Orn.), under *C. currucaria*, describes nothing but Brisson's bird.

Certhia asiatica, Lath., was described from a drawing of an Indian example by Major Roberts. I have never met with any Indian *Arachnechthra* in the plumage described under *C. cirrhata*, Lath., stated by Shaw to have been described from one of Lady Impey's drawings. *C. chrysoptera*, Lath., was described from a drawing in which the yellow axillaries were made to look like wing-coverts. *C. strigula*, Hodgs., was founded on a male in postnuptial dress. The dark sanguine pectoral band which marks the lower limit of the metallic pectoral plumage is not always so evident in this Sun-bird as in *A. lotenia*. Reichenbach (Handb. p. 295) separates Tenasserim individuals under Latham's specific name of *mahrattensis*. I am unacquainted with the Tenasserim race; but, if distinct, it must have a new title.

2. ARACHNECHTHRA LOTENIA, (L.), S. N. ed. xii. i. p. 188, no. 29, "Zeylona," ♂ adult. (1766), descr. orig.

Certhia polita, Sparrm., Mus. Carls. fasc. iii. t. 59, patr. non indic., ♂ adult. (1788), descr. orig.

? *Avis zeylonica omnicolor*, Seba, Thes. i. p. 110, t. 69.

Certhia omnicolor, Gm., S. N. i. p. 483, no. 53 (1788), ex Seba.

? *Sickle-billed Creeper*, Lath., Gen. Synop. i. pt. ii. p. 705, no. 6, patr. non indic., ex Mus. Brit., descr. orig.

Certhia falcata, Gm., tom. cit. p. 470, no. 30 (1788), ex Lath.

Le Sucrier bronzé, Le Vaill., Ois. d'Afr. vi. p. 170, t. 297, f. 1, ♂, "Africa"!

Cinnyris ceneus, Vieill. N. Diet. d'Hist. Nat. xxxi. p. 495 (1819), ex Le Vaill. t. 297, f. 1.

Purple Indian Creeper, Edw., Gleanings, ii. p. 116, t. 265. f. sup. ♂ adult., patr. incert.

Certhia purpurata, Shaw, G. Zool. viii. pt. i. p. 201 (1811), ex Edw. t. 265, f. sup.

Le Soui-manga pourpre, Audeb. & Vieill., Ois. Dor. ii. p. 29, t. 11, ♂ adult., patr. non indic., descr. orig.

Cinnyris purpuratus, Vieill., N. Dict. d'Hist. Nat. xxxi. p. 509 (1819), ex Audeb. & Vieill. t. 11.

? *Le Soui-manga à cravate violette*, Audeb. & Vieill., Ois. Dor. ii. p. 35, t. 15, patr. non indic., ♂ adolesc.

Nectarinia lotenia (L.), Jard., Nat. Lib. xxxvi. pp. 220, 263, t. 23, ♂ adult., "India."

Hab. Malabar, Carnatic, Madras, not observed elsewhere in India (Jerdon); Ceylon (Layard); Deccan (Moore).

Described from a Ceylon specimen obtained by Governor Loten. Linnæus having carelessly added the *Certhia madagascariensis viridis*, Briss., as a synonym, *lotenia* passed until recently as the title of the Madagascar bird, *N. ungaladiana*, (Shaw)*. Seba can only have meant this Ceylon species. Reichenbach (Handb.) enumerates *Cinnyris æneus*, Vieill., as a good species from South Africa!

A. lotenia, though the type of *Arachnechthra*, Cab., is isolated from the rest of the species of that genus by the great development of the bill, a speciality of structure which may account for its restricted geographical range.

3. *ARACHNECHTHRA FLAMMAXILLARIS*, (Blyth), Journ. Asiat. Soc. Beng. xiv. p. 557 (1845).

Nectarinia jugularis, Vieillot (Jard.), ap. Blyth, *op. cit.* xii. p. 979, ♂, ♀, "Tenasserim."

Hab. Arracan (Blyth); Moulmein, Kyodan, Salween valley (Walden, P. Z. S. 1866, p. 541); Pinang (Moore, Cat. E. I. C. Mus. ii. no. 1080); Pinang (Mus. nostr.); Siam (Gould, P. Z. S. 1859, p. 151).

The yellow under-plumage is much paler than in *A. pectoralis*, (Horsf.). The superciliary streak is very faint in the male, but more prominent in the female. The origin assigned to the specimen marked "China, very rare," in the Derby Museum at

* The oldest title for this Madagascar species appears to be *Certhia notatus* (!), P. L. S. Müller, *Natursyst. Anhang*, p. 99, no. 32 (1776), ex Buff. Pl. Enl. 575, f. 2, 3.

Liverpool, and identified with this species by Mr. Blyth (Ibis, 1865, p. 30), must be regarded as doubtful (*conf.* Swinhoe, Ibis, 1866, p. 129). This species has yet to be compared with *A. jugularis*, from the Philippines, but appears to differ at least in possessing a maroon transverse pectoral band.

4. *ARACHNECHTHRA RHIZOPHORÆ*, Swinhoe, Ann. & Mag. Nat. Hist. 4th ser. iv. p. 436, "Hainan" (1 Dec. 1869).

Closely allied to *A. flammixillaris*; but possessing a steel-blue frontal patch.

5. *ARACHNECHTHRA PECTORALIS*, (Horsf.), Tr. Linn. Soc. xiii. p. 167, ♂, ♀, "Java" (1820), descr. orig.

Nectarinia eximia, Tem., Pl. Col. livr. 23, t. 138. f. 1, 2, ♂, ♀, "Java" (July 26, 1823), descr. orig.; S. Müller & Schl., Verh. Nat. Gesch. Ned. Overz. Bez. Zool. Aves, p. 61, no. 10 [1846*].

Cinnyris ornatus, Less., Diet. Sc. Nat. vol. 1. p. 15, ♂, ♀ (1827), ex Temm. t. 138, f. 1, 2.

Cinnyris luteoventer, Less., Tr. p. 298, no. 29, ♂, "Sunda Islands" (1831), descr. orig. (*fide* Pucheran, Rev. Mag. Zool. 1853, p. 488).

Nectarinia pectoralis, Horsf., Jard., Nat. lib. xxxvi. pp. 226, 266, t. 25. f. 1, ♂, "Java."

Hab. Java, Sumatra, inland as well as on the coast, in enclosures and bushes, never on the mountains (Müller); Nicobars (Blyth, J. A. S. B. 1846, p. 370; Von Pelzeln, Novara, Aves, p. 52); Andamans (Tytler, Ibis, 1867, p. 322); Banjermassing (Motley *fide* Sclater); Lombok, Flores (Wallace); Labuan (Motley & Dillwyn).

Both Blyth and Moore state that this species is found in the Malay Peninsula. I have never seen an authentic Malayan spe-

* [Mr. G. R. Crotch, whose useful determination of the dates of publication of the several *livraisons* of the 'Planches Coloriées' we have already printed (Ibis, 1868, pp. 499, 500), has kindly informed us that the ornithological plates in the 'Zoologie' of the great Dutch work cited in the text, with the exception of those representing the species of *Pittæ* (published in 1839-40) appeared in 1846; but the descriptions of the species of *Nectariniæ* in the volume containing the 'Land en Volkenkunde' appeared in 1843. We have accordingly added those dates to Lord Walden's text.—ED.]

cimen; but I do possess an example of *A. flammixillaris* (Blyth) from Pinang. Sumatran and Javan individuals in my collection are undistinguishable; those from Flores and Lombok are much larger, the bill being fully .125 in. and the wing .25 longer. The female is olive-green above, and sulphur-yellow underneath. The pectoral and abdominal plumage of the male is gamboge-yellow, as in *A. frenata* (Müller). No maroon band separates the steel-blue plastron from the yellow breast. A Lombok male in my collection has a longitudinal metallic blue stripe from the chin to the breast, the forehead and rest of the plumage being the same as in the female. Is this the postnuptial attire? The orange axillaries are not to be detected. Reichenbach (Handb. no. 722) erroneously refers this species to Audebert's and Vicillot's 29th plate.

6. ARACHNECHTHRA FRENATA (S. Müller), Verh. Nat. Gesch. Ned. Overz. Bez. Land- en Volkenk. p. 173, note, ♂, ♀, "New Guinea, Menado" [1843]; *op. cit.* Zool. Aves, p. 61, t. 8. f. 1, ♂ adult. [1846].

Nectarinia australis, Gould, P. Z. S. 1850, p. 201, "North Australia."

Hab. Batchian, Ternate, Aru Islands, New Guinea, Islands of Torres Straits (G. R. Gray); Sula Islands, Celebes, Mysol, Moluccas (Wallace); Kaisa Island (Wallace, Mus. nostr. ♀). *N. australis*, North-east coast of Australia (J. Macgillivray).

Differs from *A. pectoralis*, (Horsf.), by wanting the metallic-blue frontal patch, by having the yellow supercilium and yellow cheeks more strongly marked, and by being larger even than Lombok examples of that species. In all other characters the two species are identical. An example of a female has the under-plumage quite as deep yellow as the male, it likewise possesses a yellow supercilium. After comparing a considerable series of Cape-York examples of *N. australis*, Gould, of both sexes, with authentic individuals of *N. frenata*, Müller, I have come to the conclusion that they are not specifically separable. Mysol, Celebes, Aru, and Sula examples appear to have the tips of the outer rectrices of a deeper yellow than in Cape-York individuals. A Sula specimen, in the British Museum, has the bill consider-

ably longer than in those from all other localities. Otherwise it does not differ.

7. *ARACHNECHTHRA JUGULARIS*, (L.), S. N. ed. xii. i. p. 185, no. 7, ♂ adolesc., "*Hab. in Philippinis*" (1766), ex Briss. no. 6.

Certhia philippensis minor, Briss., Ornith. iii. p. 616, no. 6, t. 32. f. 5, ♂ adolesc., "*Ins. Philipp.*," descr. orig. (1760).

Certhia philippensis olivacea, Briss., *tom. cit.* p. 623, no. 10, t. 34. f. 4, "*Ins. Philipp.*" ♂ adult., descr. orig. (1760).

Grimpereau olive des Philippines, Buff., Pl. Enl. t. 576. f. 4, ♂ adult., ex Briss. no. 10 (?).

Certhia tricolor, P. L. S. Müller, *Natursyst. Anhang*, p. 99, no. 31, ♂ adult., "*Philippines*" (1776), ex Buff. t. 576. f. 4.

Petit Grimpereau des Philippines, Buff., Pl. Enl. t. 576. f. 3, ♂ adolesc., ex Briss. no. 6 (?).

Premier Grimpereau de l'Isle de Luçon, Sonn., *Voy. Nouv. Guin.* p. 63, t. 30. f. A, ♂ adult., descr. orig. (1776).

Second Grimpereau de l'Isle de Luçon, Sonn., *l. c.* f. B, ♀ vel ♂ juv., descr. orig.

Certhia quadricolor, Scop., *Faun. et Fl. Insub.* ii. p. 91, no. 67 (1786), ex Sonn. t. 30. f. A, B.

Certhia jugularis, L., part., *Gm. S. N.* i. p. 474, no. 7 (1788), ex Linn.

Certhia gularis, Sparrm., *Mus. Carls. fasc. iv. t. 79*, "*Insula Martinique*" (!), ♂, descr. orig. (1789).

Cæreba gularis, (Sparrm.), G. R. Gray, *Gen.* i. p. 101, sp. 4; *Bp., Consp. Av.* i. p. 400, sp. 4, "*Amer. Merid.*" (!)

Certhia currucaria, L., var. β , *Lath. Ind. Orn.* i. p. 286, ♂ adolesc., ex Linn. no. 7.

Cinnyris zeylonicus, Vieill., *N. Dict. d'Hist. Nat.* xxxi. p. 507, nec Linn.

Le Souï-manga à gorge bleue, Audeb. & Vieill., *Ois. Dor.* ii. p. 51, t. 29, ♂ adult., "*Luçon.*"

Nectarinia zeylonica, Kuhl, *Nomina System.*, p. 10, no. 576, ex Buff. Pl. Enl. t. 576. f. 4, nec Linn.

Nectarinia jugularis (Vieill.), *Jard., Nat. Lib.* xiii. p. 228, t. 25. f. 2, ♂ adult., "*Philippines*," *op. cit.* p. 267.

Certhia philippensis, part., Meyen, Reise, Theil iii. p. 206 (1834).

Certhia sperata, L., ♀, Meyen, *tom. cit.* p. 207, ♂ adult., "Manilla," nec Linn.

Certhia philippensis, Briss., *tom. cit.* p. 613, no. 4, t. 30. f. 2, ♀ vel ♂ juv., "Ins. Philipp.," descr. orig. (1760).

Certhia philippina, L., S. N. ed. xii. i. p. 187, no. 2, "Philipp." (1766), ex Briss., no. 4(?).

Nectarinia pectoralis, Horsf., ap. G. R. Gray, Genera, iii. App. p. 33, ex Buff. Pl. Enl. 576. f. 4, nec Horsf.

Nectarinia jugularis, (L.), Von Martens, J. für Orn. 1866, p. 13, no. 49; *Id.* Preuss. Exped. Ost-Asien, p. 189.

Hab. Philippine Islands (Jardine, Von Martens).

Brisson described three species of *Certhia* from the Philippines, which appear to have all belonged to the present species. His "no. 10," collected by Poivre, was founded on the adult of an undoubted Philippine *Nectarinia*, a species since referred by common consent, except Reichenbach's, to *C. jugularis*, L. To this species of Brisson no binomial title has ever been directly given by any author. Linnæus identified it with his own *C. zeylonica*, one of those blunders of his which have since led to so much confusion. Brisson's species "no. 6" was described from a Philippine specimen in Aubry's cabinet; on this Linnæus founded his *C. jugularis*. From Brisson's original account, we may conclude that the type was either a young male of his "no. 10," or else an adult male of that species in postnuptial plumage. Species "no. 4" was described by Brisson from a Philippine individual also in Aubry's collection. Its identification is rendered uncertain by our being still totally unacquainted with authenticated females of the only two Sun-birds actually known to inhabit the Philippines, *Nectarophila sperata* and *A. jugularis*, or with either of these species in young male plumage before the metallic feathers appear. But if the title *C. philippina*, L., was founded on species "no. 4" of Brisson, it must merge in either *N. sperata* or *A. jugularis*; and therefore the identification is of little importance. I say, if founded on Brisson's species "no. 4," as about this there is some doubt; for, while Linnæus cites Brisson's diagnosis only, his own contains a character not

found in Brisson's account. It is thus expressed:—"rectricibus intermediis 2 longissimis." Brisson's words are, "*rectricibus binis intermediis nigris.*" Linnæus placed *C. philippina* third in a list of four species, which certainly do all possess elongated central rectrices, *C. pulchella*, *C. famosa*, and *C. violacea*. His diagnosis of all four species begins with the phrase above quoted. They are the only species Linnæus described thus characterized, which looks as if he intentionally grouped the four together on account of this character. Yet the remainder of the diagnosis of *C. philippina* agrees with that of Brisson's "no. 4;" and in the absence of evidence of its being original, it is most likely that Linnæus committed an error when compiling, and that thus the word "*longissimis*" slipped from his pen instead of "*nigris.*" Should it be shown that the Linnæan species did possess elongated middle rectrices, it is clear that it was not an *Arachnechthra*.

Sparrman's plate represents either a male moulting into postnuptial plumage, or else a male assuming full nuptial dress. Prof. Sundevall, in his critical exposition of Sparrman's 'Museum Carlsonianum' (K. Vet. Akad. Handl. 1857) states that the type is a Javan bird; but this must be a mistake, unless it be a young example of *A. pectoralis* (Horsf.) with the frontal patch undeveloped, in which case Horsfield's title would be superseded*. Figure B, in Sonnerat's plate, may have been taken from a female or very young male of *C. sperata*, L. Figures 3 and 4 of the 'Planches Enluminées' no. 576, were perhaps drawn from the original Brissonian type-specimens in the collection of De Réaumur and Aubry, or else coloured after Brisson's description. P. L. S. Müller, clearly, describes from figure 4 of the plate just mentioned, although he does not indicate the source whence he obtained his description, beyond giving Buffon's name. Montbeillard's account (Hist. Nat. Ois. v. pp. 506-510) is not original, but copied from Brisson, the dimensions included.

According to Sir W. Jardine's description of this species, the

* Do all the Sun-birds of this group, after breeding, doff their metallic feathers, except on the mesial line, in the same manner as *A. asiatica* and *A. lotenia*? If they do, *C. gularis*, Sparrm., may be *A. pectoralis* (Horsf.), in partly postnuptial plumage.

only full and trustworthy account that has yet been published, taken from a Philippine specimen obtained by Mr. Cuming, the steel-blue plastron is intensely dark on the centre, but does not extend so far down as in *A. pectoralis*, (Horsf.). Meyen, most unaccountably, regarded the Philippine *Arachnechthra* as the female of *C. sperata*, L.

8. *ARACHNECHTHRA ZENOBIA*, (Less.), Voy. Coq. Zool. i. p. 679, no. 104, t. 30. f. 3, ♂ adult., "Soya Mountains, Amboyna," (1826), descr. orig.

Cinnyris clementiæ, Less., Dict. Sc. Nat. l. p. 18 (1827), ex Less. *l. c.*

Nectarinia zenobia, (Less.), S. Müller & Schl., Verh. Nat. Gesch. Ned. Overz. Bez. Zool. Aves, p. 60 [1846].

?*Le Sucrier bronzé*, Le Vaill., Ois. d'Afr. vi. p. 170, t. 297. f. 2, "Africa"!

Chalcostetha zenobia, (Less.), Reichenb., Handb. p. 286, no. 663.

Hab. Amboyna, not uncommon among the farm enclosures and sparsely covered heights (Müller); Ké, Bouru, Amboyna, Ceram (Wallace); Dorey, New Guinea, Gilolo (G. R. Gray).

Lesson refers *C. clementiæ* to figure 2 of his plate above cited, which represents *Dicaeum erythrothorax* ♀. Bonaparte (Consp. i. p. 409) cites figure 1 of the same plate, which represents *D. erythrothorax* ♂. If the specimen from which Le Vaillant figured his alleged female of *Le Sucrier bronzé* was not manufactured, it must have been one of *A. zenobia*, as suggested by M. J. Verreaux to Prof. Sundevall in his remarks on Le Vaillant's bird (no. 297, K. Vet. Akad. Handl. 1857). A specimen in my possession, obtained from a large collection of birds sent from Queensland, and consisting of authenticated Queensland species, represents a form exactly similar to Ceram examples of *A. zenobia* (Less.), excepting that it is smaller in its principal dimensions, and that it possesses a steel-blue frontal patch. Thus this alleged Queensland bird bears to *A. zenobia* the same relation that *A. pectoralis* (Horsf.) does to *A. frenata* (S. Müller). Can it be the one mentioned by Mr. Ramsay as *Nectarinia australis* (Ibis, 1865, p. 85, no. 32)?

9. *ARACHNECHTHRA HYPOGRAMMICA*, (S. Müller), Verh. Nat.

Gesch. Ned. Overz. Bez. Land- en Volkenk. p. 173 note, "Sumatra, Borneo" [1843]; *Id.*, *op. cit.* Zool. Aves, p. 63, t. 8. f. 3, ♂ [1846].

Anthreptes macularia, Blyth, J. A. S. B. xi. p. 107, ♀, "Malacca" (1842).

Anthreptes nuchalis, Blyth, *op. cit.* xii. p. 980, ♂, "Singapore" (1843).

Hypogramma nuchalis, (Blyth), Reichenb. Handb. p. 314, no. 740.

Hab. Sumatra, Borneo, in the plains as well as in the mountain forests (Müller); Singapore (Blyth); Pinang (Moore).

The metallic plumage is restricted to the nape, lower back, and upper tail-coverts. The Singapore, Pinang, and certainly Borneo habitat of this species require confirmation.

10. *ARACHNECHTHRA SIMPLEX*, (S. Müller), Verh. Nat. Gesch. Ned. Overz. Bez. Land- en Volkenk. p. 173 note, ♂ ♀, "Sumatra, Borneo" [1843], descr. orig.; *op. cit.* Zool. Aves, p. 62, t. 8. f. 4, ♂ [1846].

Nectarinia frontalis, Blyth, J. A. S. B. xiv. p. 558, ♂, "Singapore" (1845), descr. orig.

Arachnoraphis simplex, (Müller), Reichenb., Handb. no. 736.

Hab. Sumatra (Müller); Singapore, Malayan Peninsula (Blyth, Cat. Mus. Calc. no. 1362).

In the zoological part of the Dutch work cited, Müller says that this Sun-bird is only found in Sumatra, having previously stated that it also inhabited Borneo. For its Malaccan habitat we have Mr. Blyth's authority. I have never met with a specimen from the Malay Peninsula. It is possible that Mr. Blyth's Singapore type came from Sumatra. This species forms another most interesting link in the chain of affinities which unite the members of the natural group *Arachnechthra*. In it the metallic plumage is confined to the frontal region, the rest of the plumage being soberly coloured as in the female.

11. *ARACHNECHTHRA*? *FLAVIGASTRA*, (Gould), P. Z. S. 1843, p. 109, "New Ireland;" *Id.* Voy. Sulphur, Zool. p. 43, t. 24.

Arachnoraphis flaviventris, part., Reichenb., Handb. p. 313, no. 735.

"A single specimen only was obtained;" yet two figures are given in the plate cited! The upper figure agrees with the diagnosis. The lower differs by having the rump yellow. It is not stated whence the subject of the lower figure was procured. This species does not appear to have been since obtained. The figure resembles a female of *A. frenata* (Müll.). Reichenbach (*l. c.*) has mixed up *Arachnothera flavigastra*, (Eyton, P. Z. S. 1839, p. 105), from Malacca, with the New-Ireland bird, and united them under the title cited!

12. *ARACHNECHTHRA SOLARIS*, (Temm.), Pl. Col. livr. 58, t. 347. f. 3, "Amboyna," ♂, May 21, 1825; S. Müller & Schl., Verh. Nat. Gesch. Ned. Overz. Bez. Zool. Aves, p. 60, t. 8. f. 5, ♀ [1846].

Hab. Timor, Poeloe Samauw (Müller); Timor, Flores (Wallace).

Müller (*l. c.*) has shown that Temminck was in error when he stated that his type-specimens came from Amboyna. This species is a somewhat isolated form. The metallic part of its plumage is green, as in *N. osea*, and the flame-colour of the axillaries is diffused over the entire under surface.

13. *ÆTHOPYGA MILES*, (Hodgs.), Ind. Rev. ii. p. 273, descr. orig., ♂, ♀, et juv., "Nipaul" (1837).

Certhia goalpariensis, Royle, Ill. Him. Bot. ii. t. 7. f. 1, ♂ adult., "Deyra Doon" (1839).

Cinnyris labecula, McClell., P. Z. S. 1839, p. 167, ♂ adult., "Assam," descr. orig.

Nectarinia goalpariensis, Royle, Jard., Nat. Lib. xxxvi. pp. 230, 267, t. 27, ♂ adult., "Nipaul;" Blyth, *partim.*, Cat. Mus. Calc. no. 1351.

Goulpourah Creeper, Lath., Gen. Hist. iv. p. 221, t. 74, "Goulpourah," ♂ adult.

McClelland's title is here added as a synonym on the authority both of Blyth (*l. c.*) and of Moore (Cat. E. I. Mus. ii. p. 732); yet no mention is made in McClelland's diagnosis of the yellow rump. Moulmein and Tippera examples in my collection are smaller than those from the Deyra-Doon and from Nipaul. From Tippera, wing 2.12, tail 2.72, bill .57; from the Deyra-Doon, wing 2.18, tail 3.18, bill .6. The Moulmein specimen is still

smaller. The middle pair of rectrices are steel-blue, not steel-green. The lower back of a much deeper yellow. In both, the metallic cap is confined to the crown, and does not descend the nape as in the Deyra-Doon bird. The geographical range of *Æ. miles* cannot be defined with accuracy until the exact limits of *Æ. vigorsi* are ascertained, the specific value of *Æ. seheriæ* determined, and the variation that *Æ. miles* itself undergoes in the widely-separated localities it is said to inhabit have been investigated.

14. *ÆTHOPYGA VIGORSI*, (Sykes), P.Z.S. 1832, p. 98, no. 134, ♂ adult., "Dukhun;" Gould, Birds of Asia, pl. 26.

Cinnyris concolor, Sykes, l. c. no. 137, ♀.

? *Nectarinia seheriæ*, Tickell, Journ. Asiat. Soc. Beng. ii. p. 577, ♂ adult., "Seheria" (1833), descr. orig.

Hab. Inhabits only the lofty trees of the dense woods of the Ghauts (Sykes); Bustar country (Jerdon).

Dr. Jerdon suggests that the Ghauts referred to by Colonel Sykes are the Mahableschwur Hills. It is a most rare bird in collections, to be distinguished (*fide* Moore, *op. cit.*) from the last "by the small crescent of brilliant metallic blue on the ear-coverts." Mr. Moore states as a differential character "the light yellow striæ which intersect the scarlet of the breast;" but whether they be found in fully adult birds is an open question. Until examples from Borabhoom and its vicinity are examined, it cannot be decided whether the type of *N. seheriæ* represents a species distinct from *Æ. miles* or from *Æ. vigorsi*. It must be rare in that part of India; for Captain Beavan failed to obtain or even see it.

15. *ÆTHOPYGA TEMMINCKI*, (S. Müller), Verh. Nat. Gesch. Ned. Overz. Bez. Land en Volkenk. p. 173, note, ♂, "Sumatra" [1843]; *op. cit.* Zool. Aves, p. 56, t. 8. f. 2 [1846].

Hab. In the dense forests on the mountains of Singalang, and in those of the eastern mountain ranges of Sumatra (Müller).

To be distinguished from all other kinds by the metallic violet circle on the head, shaped somewhat like a horse-shoe. A lovely species.

16. *ÆTHOPYGA SIPARAJA*, (Raffles), Tr. Linn. Soc. xiii. p. 299, ♂ adult., "Sumatra" (1822), descr. orig.

Nectarinia mystacalis, Temm., Pl. Col. livr. xxi. t. 126. f. 3, ♂ adult., "Java" (Aug. 2, 1823); S. Müller & Schl., Verh. Nat. Gesch. Ned. Overz. Bez. Zool. Aves, p. 55, t. 9. f. 1, ♀, nest and egg.

? *Nectarinia lathamii*, Jard., *op. cit.* pp. 233, 268, ♂ adult., "India" (1842).

? *Ethopyga eupogon*, Cab. Mus. Hein. i. p. 103, note, "Malacca, Borneo" (1850-51).

Hab. Sumatra, Java, Borneo (Müller); Pinang (Moore); Banjermassing (Sclater).

The specific title given by Sir S. Raffles is the name, according to him, by which this species is known to the Malays; it means "King-Sucker" (*conf.* Müller, *l. c.* in note). No mention is made by either Sir Stamford or Temminck of its possessing a yellow lower-back, nor is this feature indicated in Temminck's plate; yet two Javan examples I have examined have the uropygium yellow as in the rest of the genus. Whether identically the same species inhabits all the localities above cited has yet to be shown. Banjermassing individuals are said to be doubtfully distinct (Sclater, P. Z. S. 1863, p. 220). Dr. Cabanis unites Bornean and Malaccan examples under the title quoted, and separates them from Sumatran individuals of *Æ. siparaja*. Banjermassing specimens which I have compared with Javan do not exhibit the differences on which Dr. Cabanis (*l. c.*) relies:—"nicht nur die Mitte der Stirn und des Scheitels, sondern die ganze Stirn und darüber hinaus violett blau glänzend." The types may have come from some other part of Borneo. Malaccan examples I have not seen. Dr. Salvadori (Ibis, 1865, p. 549) states that both *Æ. siparaja* and *Æ. eupogon* want the yellow rump, but does not state his authority.

17. *ÆTHOPYGA CHALCOPOGON*, Reich., Handb. Spec. Orn. part xi. p. 303, no. 708, t. 586. f. 3982-83, "Borneo" (Nov. 1, 1853).

Said, by its describer, to be closely allied to *Æ. goalpariensis*, i. e. *Æ. miles*. "The cap metallic green, but restricted to the fore part of the head. Upper tail-coverts and moustache glistening steel-blue. Middle tail-feathers edged with blue." The part of Borneo whence it came is not mentioned.

18. *ÆTHOPYGA FLAVOSTRIATA*, (Wallace), P. Z. S. 1865 (June 13), p. 478, t. 29, f. 2, ♂ adult. (?), Menado (Celebes).

? *Æthopyga lodoisia*, Salvadori, Ibis, 1865 (October), p. 548, patr. incert.

The yellow striæ on the throat-feathers of this species appear to exist in fully-plumaged males, and, while being a sign of adolescence in *Æ. miles*, accompany maturity in *Æ. flavostriata*. I add Dr. Salvadori's title, as a synonym, with some doubt, not having had an opportunity of examining his type. The *Æthopyga* (sp. non descr.) from Menado, in M. Verreaux's collection, with the abdomen almost black, mentioned by Dr. Salvadori (*l. c.*), cannot well be anything else than *Æ. flavostriata*.

19. *ÆTHOPYGA DEBRUI*, (J. Verr.), Rev. et Mag. Zool. 1867 (May), p. 173, t. 15, ♂ adult., "découverte dans le nord de la Chine."

Crown, chin, throat, spot on the parotic region, and a detached stripe on each side of the lower part of the neck, metallic violet. Remainder of head, neck, back, and scapulars deep red, becoming lighter on the breast at its lower part, where it merges into a yellow tint, which colours the rest of the under parts as well as the uropygium. Tail long, tipped with whitish, most apparent on the underside. Middle rectrices twice the length of the others, and, with the upper tail-coverts, metallic steel-colour. M. Verreaux observes that the whitish edgings of the outer rectrices distinguish this bird from all the known species of *Æthopyga*. There must be some mistake about its habitat; Cochin China is probably intended. Mr. Anderson has lately obtained this species in Yunnan.

20. *ÆTHOPYGA GOULDIÆ*, (Vigors), P. Z. S. 1831, p. 44, ♂ adult., "Himalayas."

Cinnyris gouldiæ, Vigors, Gould, Cent. Him. Birds, t. 56.

Hab. Himalayas, from Kumaon to Sikim, Assam, Sylhet, Arracan (Jerdon); Kotegurh in winter, Tranda, Gaora (Stoliczka).

21. *ÆTHOPYGA NIPALENSIS*, (Hodgs.), Ind. Rev. ii. p. 273, ♂, ♀, "Nipaul" (1837).

Nectarinia nipalensis, Hodgk., Jard., Nat. Lib. xxxvi. pp. 236, 268, t. 27.

Hab. Eastern Himalaya from Nipaul to Bootan; common in Kassiah Hills and at Darjeeling (Jerdon, B. Ind. i. p. 366).

22. *ÆTHOPYGA HORSFIELDI*, (Blyth), J. A. S. B. xi. p. 107 (1842); descr. *op. cit.* xii. p. 975, ♂, "Himalayas" (1843).

Hab. North-Western Himalayas (Jerdon); Mussoorie (Blyth, *op. cit.* xvi. p. 472).

Differs chiefly from *Æ. nipalensis*, by having the back green instead of red, a somewhat doubtful character. Mr. Gould (Birds of Asia, pl. 2, 1850) is of opinion that the green plumage of the back indicates immaturity (*cf.* Jerd. B. Ind. i. p. 367).

23. *ÆTHOPYGA IGNICAUDA*, (Hodgk.), Ind. Rev. ii. p. 273, ♂ ♀, "Nipaul" (1837), descr. orig.

Cinnyris rubicaudata, Blyth, J. A. S. B. xi. p. 192, ♂ adult., Darjeeling (1842); descr. *op. cit.* xii. p. 972 (1843).

Nectarinia phænicura, Jard., Nat. Lib. xxxvi. pp. 242, 270. t. 29. ♂ ♀, "Sylhet" (1842), descr. orig.

Cinnyris epimecurus, Hodgk., J. E. Gray, Zool. Misc. p. 82. ♂, Nipaul (1844), descr. nulla.

Hab. Eastern Himalaya from Nipaul to Bootan, Assam, Sylhet. Spring visitant at Darjeeling (Jerdon).

Hodgson (*l. c.*) states that this, together with the other Nipalese Sun-birds, is not migratory. Of all the *Æthopygæ*, the tail in this species attains the most extended dimensions, measuring in some individuals nearly 5 inches.

24. *ÆTHOPYGA SATURATA*, (Hodgk.), Ind. Rev. ii. p. 273, ♂, "Nipaul" (1837), descr. orig.

Cinnyris assamensis, McClelland, P. Z. S. 1839, p. 167, ♂, "Assam," descr. orig.

Nectarinia hodgsonis, Jard., Nat. Lib. xxxvi. pp. 241, 269, t. 29. ♂, "Nipaul" (1842), descr. orig.

Hab. South-eastern Himalayas, Assam, Sikim (Jerdon).

25. *ÆTHOPYGA CHRISTINÆ*, Swinhoe, Ann. & Mag. Nat. Hist. 4th ser. iv. p. 436, "Mountainous regions of Central Hainan" (1 Dec. 1869). (Plate I. fig. 1.)

One of the most interesting of Mr. Swinhoe's recent discoveries in the Island of Hainan. A representative of *Æ. saturata*, but perfectly distinct.

26. *ÆTHOPYGA EXIMIA*, (Horsf.), Tr. Linn. Soc. xiii. p. 108, ♂ adult., "Java" (1820).

Nectarinia kuhli, Temm. Pl. Col. livr. 63, t. 376. f. 1, 2, ♂, ♀, "Java" (Nov. 12, 1825).

Hab. Java (S. Müller).

This lovely bird appears to be peculiar to Java. It is an *Æthopyga*, but what I may term a transitional form. The prevailing character of the plumage in the male is what is found existing in the females only of the other species. The chin, throat, and upper breast alone are red. The metallic violet markings are confined to a throat-mark shaped like the letter V reversed. It possesses the characteristic yellow lower-back of the group, and the metallic occipital cap. The remainder of the plumage, including the wing-coverts, is dark olive. S. Müller gives an interesting account of this species, which lives at the height of from 8000 to 9000 feet among the mountains and in the extinct craters of Java. It breeds there during May and June, and afterwards descends to the coffee-plantations, and is then to be found in the enclosures of the inhabited districts.

27. *NECTAROPHILA* ZEYLONICA*, (L.), S. N. ed. 12, i. p. 188, no. 23, ♂ adult., "Zeylona" (1766), descr. orig.

Certhia lepida, Sparrm., Mus. Carls. fasc. ii. t. 35, ♂ adult., patr. non indicata (1787), descr. orig.

Le Sucrion, Le Vaill., Ois. d'Afr. vi. p. 172, t. 298. f. 1 (avis composita), "Africa"!

Cinnyris pusillus, Vieill., N. Diet. d'Hist. Nat. xxxi. p. 513 (1819), ex Le Vaill. t. 298, f. 1.

Certhia zeylonica, L., Lath., Ind. Orn. i. p. 285, no. 13.

?*Ceylonese Creeper*, var. A., Lath., Gen. Synop. i. 2. p. 713, patr. non indic., "Mus. Brit.," ♂ juv.?, descr. orig.

* Reichenbach (Nat. Syst. Suppl.) gave this generic title to the species of this group—*Leptocoma*, Cab. (1850-51) (*vide* Reichenb.), having been previously employed in botany. *C. brasiliانا*, Gm., is the type. Links are wanting between it and *N. sperata*, and between *N. sperata* and *N. zeylonica* and *N. minima*.

Certhia zeylonica, L., var. β , Gm., S. N. i. p. 482, no. 29, ex Lath.

Certhia dubia, Shaw, Gen. Zool. viii. 1. p. 204 (1811), ex Lath.

Le Souï-manga brun et blanc, Audeb. & Vieill., Ois. Dor. ii. p. 118, t. 81, "Mus. Brit.," ex Lath.

Cinnyris nigroalbus, Less., Dict. Sc. Nat. vol. 1. p. 6 (1827), ex Audeb. & Vieill. t. 81.

Le Souï-manga à ceinture marron, Audeb. & Vieill., Ois. Dor. ii. p. 37, t. 16, patr. non indic., ♂ adult., descr. orig.

Cinnyris sola, Vieill., N. Diet. d'Hist. Nat. xxxi. p. 512, "Pondicherry," ♂ adult. (1819), descr. orig. (cf. Pucheran, Rev. et Mag. Zool. 1853, p. 483).

Cinnyris solaris, Less., Tr. p. 297, no. 28, ♂ ♀, "Pondicherry, Bengal" (1831), descr. orig. (nec *C. solaris*, Temm.); Less. loc. cit. no. 25 (cf. Puch. tom. cit. p. 488).

Cinnyris lepida, (Sparrm.), Sykes, P.Z.S. 1832, p. 98, no. 132, "Dukhun."

Nectarinia zeylonica, (L.), Jard., Nat. Lib. xxxvi. pp. 213, 261, t. 20, ♂ adult., "India."

?*Certhia currucaria*, L., S. N. ed. 12, i. p. 185, no. 6 (syn. excl.), ♂, "Zeylona" (1766), descr. orig.

Certhia flaviventris, Herm., Obs. Zool. p. 136, ♂ adult., "Tranquebaria" (1804), descr. orig.

?*Certhia citrinella*, Herm., op. cit. p. 137, "Tranquebaria," av. juv. (1804), descr. orig.

?*Anthreptes sperata* (L.), Licht. Nomencl. Av. Mus. Berol. p. 56, "Bengalen."

Hab. India from the extreme south to Bengal, not reaching the Himalayas. Rare in Central India. Not found in North-western Provinces. Extends through Dacca into Assam (Jerdon); Southern Ceylon (Layard); Bombay (Swinhoe).

Le Sucrion, Le Vaill., seems to have been composed of an example of *N. zeylonica* and the breast of *Arachnechthra solaris* (Temm.). We have no means whereby we can positively identify Latham's *Ceylonese Creeper*, var. A. Audebert's plate 81 was apparently drawn from Latham's type. *C. flaviventris*, Herm., is too shortly described to enable us to say, with our imperfect knowledge of the constant characters which distinguish the females and

young males of the two species, whether it belongs to *N. zeylonica* or *A. asiatica*. And the same observation will apply to *C. curru-caria*, L. Old males from Bengal and Maunbhoom are larger than those from Malabar. These again are larger than those from Ceylon. In the northern race the metallic hood seems to descend lower down the nape. In the colouring of the plumage I can discover no difference. A specimen in the British Museum, presented by Mr. Swinhoe, but from an unknown locality, is not only a larger bird, but differs from the examples already mentioned by having the crown of the head and shoulder-coverts coppery green instead of emerald green, the uropygium and upper tail-coverts brilliant blue violet and not bright red violet. Chin and throat-patch dark blue violet, and not bright ruby-violet. These colours were contrasted during bright sun-light.

The comparative dimensions are here given :—

		Rost. a nar.	Al.	Caud.
<i>N. zeylonica</i> (L.),	Ceylon	·5	2·	1·37
„	Maunbhoom	·56	2·12	1·37
„	Brit. Mus.	·56	2·31	1·75

I refrain from giving this form a title until I have been able to examine more examples. Is it the “variety” mentioned by Sir W. Jardine (*l. c.*) as being preserved in Mr. Strickland’s collection*? Perhaps the British-Museum specimen came from Bombay, where Mr. Swinhoe mentions having observed *N. zeylonica* (Ibis, 1864, p. 416). The characters which denote the female and distinguish her from the young male have not been, as yet, absolutely defined. Information on this point, based on dissection,

* [The Strickland collection contains two male specimens which seem to belong to different species, though each is marked in Mr. Strickland’s handwriting “*zeylonica*”; the only other information afforded by the labels is in both cases “India. Mr. Askew, 1839.” In one of these the top of the head, seen against the light, is dark green, but crimson-violet from the light; the throat crimson-violet against the light, but from the light bluish-violet; the rump and upper tail-coverts, seen from the light, are bluish-violet, but against the light the former is crimson-violet. In the other example the top of the head is bright green in both lights; the throat, rump, and upper tail-coverts coppery-violet against the light, but from it crimson-violet. Both specimens are otherwise alike; they are unfortunately in bad condition, the first having lost its bill, and the last its feet.—ED.]

is most desirable; for the affinities of the Sun-birds can be best determined by a study of the females and young. Two distinct phases of plumage are observable in the young or else in the female of this species. The first, in which the general colour above is ashy-brown and underneath bright yellow, but with the chin, throat, and upper breast (that is, the violet and maroon region in the old male) albescent, defining that part from the remainder of the under surface. In this stage the occipital feathers have slightly darker centres, the upper tail-coverts are generally found passing into metallic black, and the rump-feathers sometimes with reddish tips. This phase, I surmise, represents the male of the first year. But it may be also found in the female, to which Dr. Jerdon says it belongs. In the second phase the entire upper plumage is greenish or olive-brown, the lower uniform light yellow. This I suspect to be the female livery. In both, the outer edgings of the quills above are ferruginous brown—a characteristic alone sufficient to distinguish this species from the females or young of all the even-tailed Asiatic Sun-birds I have examined. It may, perhaps, be found in *N. minima*, (Sykes). This second phase, which I attribute to the female, agrees perfectly with the Linnæan diagnosis of *C. currucaia*.

28. *NECTAROPHILA MINIMA*, (Sykes), P. Z. S. 1832, p. 98, ♂ ♀, "Deccan."

Nectarinia minuta, (Sykes) (*errore*), Jard., Nat. Lib. xxxvi. pp. 224, 265, tab. in titul., "Malabar," ♂, ♀ (?).

Hab. Deccan, "only in the dense woods of the Ghauts" (Sykes); Malabar; "high forest jungle, west coast, from about lat. 18° N. to Travancore, slopes of Neilgherries up to 3000 feet" (Jerdon); Northern Ceylon (Layard, Ann. Nat. Hist. 2 ser., xii. p. 175).

This is an exceedingly rare species in collections. Two of Colonel Sykes's types are preserved in the British, and one in the East-India Museum. It is well marked, and, though closely allied to *N. zeylonica*, differs by being smaller than even Ceylon examples of that species (bill .43, wing 1.81, tail 1.25), by the upper and non-metallic plumage of the breast being deep red, and by having the metallic feathers of the lower-back and of the upper

tail-coverts of a lighter shade of red-violet. It appears likewise not to have metallic shoulder-coverts.

If we may rely upon the authorities, the female retains a considerable resemblance to the male. According to Colonel Sykes, the female is uniform brown, with a patch of brick-red on the rump and upper tail-coverts, and the yellow below fainter than in the male. Sir William Jardine describes and figures the female above without a coronal patch; head, neck, and mantle yellowish oil-green; the lesser coverts, lower-back, and upper tail-coverts of the same colour as the male, but with a slight tinge of varying bluish purple; wings and tail umber-brown; lower parts entirely dark primrose-yellow. Dr. Jerdon says, "the female is olive-brown above, with a red rump, and pale yellow beneath." Nothing analogous is to be met with in any other of the Eastern Sun-birds; and considering how seldom this species has been observed, may we not conjecture that young males have been mistaken for females?

29. *NECTAROPHILA BRASILIANA*, (Gm.), S. N. i. p. 474, no. 41, "Brasilia"! ♂ adult. (1788), ex Briss. no. 30.

Le Grimpereau violet du Brésil, Briss. Orn. iii. p. 661, no. 30, "Brasilia," ♂ adult., descr. orig.

Nectarinia hasseltii, Temm., Pl. Col. livr. 63, t. 376. f. 3, ♂ adult., "Java" (Nov. 12, 1825), descr. orig.; S. Müller & Schl., Verh. Nat. Gesch. Ned. Overz. Bez. Zool. Aves, p. 59, t. 10. f. 5, ♀; Jard., Nat. Lib. xxxvi. pp. 218, 262, t. 12, ♂ adult., "East-India Islands."

Certhia sperata, L., Raffles, Tr. Linn. Soc. xiii. p. 298, "Sumatra."

Cinnyris ruber, Less., Tr. d'Orn. p. 296, no. 23, ♂ adult., "patr. incert." (1831), descr. orig. (*vide* Pucheran, Rev. et Mag. Zool. 1853, p. 487).

Nectarinia phayrei, Blyth, J. A. S. B. xii. p. 1008, ♀ adult., "Arracan" (1843), descr. orig.

Senegal Creeper, var. A, Lath., Gen. Hist. iv. p. 237. no. 25, "Malacca."

Hab. Java, Sumatra, Borneo (S. Müller); Pinang, Malacca, Arracan (Moore); Moulmein (Beavan); Banjermassing (Selater).

Mr. Moore has a remark on Müller's figure of the female of this species (Cat. Mus. E. I. C. ii. p. 740). Lesson's type-specimen existed in 1853 in the Paris Museum, and (*fide* Pucheran, *l. c.*) was brought from Sumatra by Duvaucel in September 1821. Thus the Sumatran, Javan, and Arracanese race have each had a separate title conferred on them. They do not differ specifically.

30. NECTAROPHILA GRAYI (Wallace), P. Z. S. 1861, p. 479, "Menado." (Plate I. fig. 2.)

A representative form of *N. brasiliana*, apparently restricted to Celebes. Of the five species of *Nectariniæ* recorded as inhabiting that interesting island, three belong to Indo-Malayan genera, one to the widely-spread genus *Arachnechthra*, and one to the Austro-Malayan group *Chalcostetha*. Three species are peculiar to Celebes, two of which, *Æ. flavostriata* and *N. grayi*, possess Indo-Malayan, and the other, *Chalcostetha porphyrolama*, Austro-Malayan affinities. One of the foreign species, *A. malaccensis*, is an Indo-Malayan form; the other, *A. frenata*, is a widely-diffused Australian species.

Mr. Wallace possesses an example of what appears to be the young male of a sixth species from Celebes. It has the edgings of the quill-feathers and most part of the upper surface of the rectrices dull red.

31. NECTAROPHILA SPERATA, (L.), S. N. ed. xii. p. 186, no. 13, "Philippines" (1766), ex Briss. no. 27.

Certhia philippensis purpurea, Briss., Orn. iii. p. 655, no. 27, t. 31. f. 2 ♂, 3 ♀, "Ins. Philippines." (1760), descr. orig.

Grimpereau des Philippines, Buff., Pl. Enl. t. 246. f. 1 ♂, 2 ♀.

Certhia jugularis, P. L. S. Müller, Natursyst. Anhang, p. 98, no. 29 (1776), ex Buff.

Troisième Grimpereau de l'Isle de Luçon, Sonn., Voy. Nouv. Guin. p. 63, t. 30, f. D, ♂ adult., descr. orig.

Certhia chalybea, Scop., Fl. et Faun. Insub. ii. p. 91, no. 68 (1786), ex Sonn. t. 30. f. D.

Certhia sperata, L., var. β , Gm., S. N. i. p. 477, no. 13, ex Sonn.; var. γ , Lath., Ind. Orn. i. p. 283, no. 8, ex Gm.

Le Souï-manga à gorge violette, Audeb. & Vieill., Ois. Dor. ii. p. 56, t. 32, ♂ adult., ex Sonn.

Certhia affinis, Shaw, Gen. Zool. viii. i. p. 208 (1811), ex Audeb. & Vieill. t. 32.

Nectarinia coccinogastra, Temm., Pl. Col. livr. 65, t. 388. f. 3, ♀ adult., "Manilla" (May 27, 1826), descr. orig.

Nectarinia philippensis (part.), Meyen, Reise, Zool. p. 206 (1834).

Certhia zeylonica, L., ap. Meyen, l. c. ♂ adult., "Manilla," nec L.

Nectarinia affinis, (Shaw), Jard., Nat. Lib. xxxvi. pp. 216, 262, t. 20, ♂ adult., "patr. incert."

Anthreptes expectata, Licht., Nomencl. Av. Mus. Berol. p. 56, "Manilla" (1854).

Nectarinia coccineogastra, Temm., Von Martens, J. für Orn. 1866, p. 12, no. 48; *Id.*, Preuss. Exped. Ost-Asien, p. 189.

Hab. Luzon (Von Martens).

Specimens, of both sexes, brought to France from the Philippines by Poivre, enabled Brisson to describe the species which Linnæus named *Certhia sperata*. Brisson described the crown as of a metallic-violet colour; Sonnerat, from specimens obtained by himself, recorded that part as being metallic-green; and Temminck used expressions, when describing the varying hues of this beautiful species, which convey a meaning slightly differing from that transmitted by the two older authors. Setting aside the extreme improbability of three closely allied yet distinct species of this isolated form coexisting at Manilla, it seems pretty clear that the slight discrepancies to be found on comparing the original descriptions result from the difficulty of noting the iridescent hues of metallic plumage. Violet and green are frequently interchangeable, according to the light, as, for instance, in the dorsal plumage of *A. malaccensis*, (Scop.). Reichenbach, however, enumerates *C. sperata*, L., *C. affinis*, Shaw, and *N. coccinogastra*, Temm., as three distinct species (Handb. Spec. Orn. nos. 651, 652, 653)*.

* *Certhia aurantia*, Gm. (ex Lath. G. Synop. i. ii. p. 724, no. 38), brought from Africa by Smeathman, and suggested by Shaw (Gen. Zool. vii. p. 207) to be a variety of *C. sperata*, L., can be nothing else than *Certhia crocata*, Shaw & Nodder (Vivar. Nat. vi. t. 210), i. e. *C. violacea*, L.

32. *CHALCOSTETHA INSIGNIS*, (Jard.), Nat. Lib. xxxvi. p. 274 (1842), ex Temm. Pl. Col. 258, f. 3.

Nectarinia pectoralis, Temm., Pl. Col. livr. 23. t. 258. f. 3, "Java," ♂ adult., descr. orig. (July 26, 1823); Müller & Schl., Verh. Nat. Gesch. Ned. Overz. Bez. Zool. Aves, p. 57, t. 9, f. 2, ♀, nest and egg.

Nectarinia calcostetha (Jard.), *op. cit.* p. 263, "E. Ind. Islands?," ♂, descr. orig. (1842).

Cinnypis macklotii, Bp., Consp. Av. i. p. 408, sp. 44, p. 850 (1850), ex Temm., t. 258, f. 3.

Chalcostetha pectoralis (Temm.), Cab. Mus. Hein. i. p. 103.

Nectarinia insignis, Gould, P. Z. S. 1865, p. 663, ♂, "Penang," descr. orig.

Nectarinia eximia, Horsf., apud Temminck, *l. c.* (nec Horsf.).

Hab. Sumatra, Java (Müller); Pinang (Gould); Malacca (Mus. nostr.); Siam? (Mus. Brit.); Banjermassing (Sclater).

First described and figured by Temminck (1823) under the title of *N. pectoralis*, already employed by Horsfield for another species. Sir W. Jardine (1842) therefore proposed for it the title of *N. insignis*, having in the same work (Nat. Lib.) already described an actual example of Temminck's species under the title of *N. calcostetha* (*cf.* J. A. S. B. 1843, p. 969, note). This specific title Dr. Cabanis (1850-51) raised to generic rank and restored Temminck's original specific name of *pectoralis*. Bonaparte (1850), however, rejected Temminck's designation and proposed that of *macklotii*. Finally Mr. Gould (1865) described a Penang example as new under one of the titles already published by Sir W. Jardine. As Dr. Cabanis seems to be justified in generically separating the group to which this Sun-bird most nearly belongs, the name of *insignis*, Jard., takes precedence. S. Müller (*l. c.*) gives a most interesting account of the habits. We have no positive proof that the alleged Malaccan examples are not in truth of Sumatran origin.

This species forms a link between *Arachnechthra* and the Austro-Malayan species which constitute the genus *Chalcostetha*, Cab. Though the type of Dr. Cabanis's genus, it is, strictly speaking, an aberrant form of that group, more nearly affined, however, to *C. aspasia*, *C. proserpina*, and others, than to *A.*

asiatica and its congeners. The yellow axillaries are the principal character which indicates its affinity to *Arachnechthra*.

Certhia manillensis, Gm. (S. N. i. p. 471. no. 32, the diagnosis of which is taken, but unacknowledged, from Montbeillard, Hist. Nat. Ois. v. p. 496, ex Luçon), belongs either to this species or else to one not since recognized from Luzon. The French author having described *Le Souï-manga* (*C. souimanga*, Gm.), remarks :—" On doit rapporter à cette espèce, comme variété très-prochaine, le Souï-manga de l'isle de Luçon que j'ai vu dans le beau cabinet de M. Mauduit, et qui a la gorge, le cou et la poitrine couleur d'acier poli, avec des reflets verts, bleus, violets, etc., et plusieurs colliers que le jeu brillant de ces reflets paroît multiplier encore ; il semble cependant que l'on en distingue quatre plus constans, l'inférieur violet-noirâtre, le suivant marron, puis un brun, et enfin un jaune ; il y a deux taches de cette couleur au-dessous des épaules ; le reste du dessous du corps, gris-olivâtre ; le dessus du corps, vert-foncé avec des reflets bleus, violets, etc., les penes des ailes, les penes et couvertures supérieures de la queue, d'un brun plus ou moins foncé, avec un œil verdâtre." Were it not for the alleged Philippine origin, I should not hesitate to refer *C. insignis*, (Jard.) to *C. manillensis*, Gm.

33. *CHALCOSTETHA ASPASIA*, (Less.), Voy. Coq. Zool. i. p. 676, no. 100, t. 30. f. 4, "Dorey" (New Guinea), ♂ adult. (1826).

Cinnerys sericeus, Less., Dict. Sc. Nat. l. p. 21, "Dorey" (1827), ex Less. Voy. Coq. t. 30. f. 3 (*errore*).

Hermotimia aspasia (Less.), Reichenb. Handb. p. 285, no. 661.

Hab. Celebes, Amboyna, Banda Islands, New Guinea (S. Müller) ; New Guinea, Waigiou, Mysol, Aru (Wallace, *fide* Gray).

Müller mentions having obtained this species at Macassar (*op. cit.* Aves, p. 58). I do not find it given from Celebes in any of Mr. Wallace's lists. It is therefore probable that Müller did not notice the characters discriminated by Mr. Wallace in the nearly allied species *C. porphyrolæma*. Again, by including Amboyna within its range, Müller seems not to have recognized the specific differences of *C. aspasioides* (G. R.

Gray). Lesson, in his description of *C. sericeus*, quotes the number of the figure which represents *A. zenobia*.

A young male from Mysol in my collection is not to be distinguished from the specimen, described further on, of *C. auriceps*. But it has only put on two metallic shoulder-coverts, and two of the neck-stripe plumes, and that on one side only. One of the dorsal feathers is tipped with metallic-green. On the habits of this species, consult Müller (*l. c.*).

34. *CHALCOSTETHA ASPASIOIDES*, (G. R. Gray), P. Z. S. 1860, p. 349, "Amboyna."

A species doubtfully separable from *C. aspasia*.

35. *CHALCOSTETHA PORPHYROLEMA*, (Wallace), P. Z. S. 1865, p. 479, "Macassar."

The violet-purple throat at once distinguishes this species from *C. aspasia*.

36. *CHALCOSTETHA PROSERPINA*, (Wallace), P. Z. S. 1863, p. 32, ♂ ♀, "Bouru."

A larger bird than *C. aspasia*, the middle and greater wing-coverts not metallic, but otherwise exactly like it. A Bouru example marked a female, in my collection, presents no features (its larger dimensions excepted) whereby it can be distinguished from the young male of *C. aspasia* already noticed, beyond that the tail is dull brown, and not black, and wants all traces of a silky or metallic gloss. This, as far as my investigations permit me to state an opinion, is a characteristic of the female in some, if not in all, of the Eastern Sun-birds.

37. *CHALCOSTETHA AURICEPS*, (G. R. Gray), P. Z. S. 1860, p. 348, "Batchian, Ternate."

Hab. Sula Islands, Batchian, Gilolo (Wallace).

This species is to be readily distinguished from the four last by the top of the head being bright golden green; otherwise it is closely allied. An example of a female (so marked by Mr. Wallace) in my collection, from Ternate, is above cinereous-brown, washed with olive-green on the dorsal region. Occipital feathers with pale cinereous edgings. Cheeks, chin, throat, and upper part of breast greyish-white; remainder of

under surface pale yellow. Wings brown, coverts olive-green, and quills edged with that colour. Rectrices black, with a faint blue gloss, the three outer pairs tipped with dirty white. A young male putting on the perfect plumage, in my collection, from Gilolo, resembles the female, but is darker in all its hues; it has already assumed a frontal patch of pure golden-green. The rectrices of the young bird are still retained, and, as in the adult female, the three outer pairs are tipped with white. The upper tail-coverts are metallic-blue. A new bright shoulder-covert or two has appeared; and a bright metallic-blue line descends from each angle of the mouth, the first indication of the glistening gorget of the perfect male. I mention these details, as I feel persuaded that by a study of the phases of plumage the young males of the *Nectariniæ* pass through before reaching maturity, we shall be able to predicate with some certainty the relative age of each species in the world's history. Even with the imperfect knowledge at our command, it may, I venture to think, be safely assumed that the males of the original species from which all the Sun-birds are descended were plainly-coloured, like the females and young of the present time; and it can be shown, in one or two instances at least, that the perfect plumage of one species represents a phase of imperfect plumage in another.

38. *ANTHREPTES MALACCENSIS*, (Scop.), Del. Fl. et Faun. Insub. ii. p. 90, no. 62, ex Sonn. (1786).

Le Grimpereau de Malacca, Sonn., Voy. Ind. ii. p. 209, t. 116.* f. 1, ♂, descr. orig.

Nectarinia javanica, Horsf., Tr. Linn. Soc. xiii. p. 167, "Java," (1822), descr. orig.

* The *Grimpereau gris de la Chine* of the next Plate (117)—*Certhia grisea*, Scop. (ex Sonn.), and also, but independently of Latham (ex Sonn.), *C. taniata*, Shaw, ex Sonn., and *Dicaeum flavipes*, Vieill., ex Sonn.), is a *Prinia*, with ten rectrices, and agrees with *Prinia sonitans*, Swinhoe (Ibis, 1860, p. 50, from "Amoy and Foochow"); and I may here mention that *C. parietum*, Lath. (Ind. Orn. i. p. 298, no. 58, 1790, founded on Sonnerat's *Rossignol de muraille des Indes*, op. cit. p. 208), seems to be *Phanicura supercilialis*, Jerd. olim, the South-Indian race of *Larvivora cyanea*, Hodgk., from which it is specifically separable.

Certhia lepidus, Sparrm., ap. Lath. Ind. Orn. i. p. 298, no. 60, ex Sonn. (nec Sparrm.).

Nectarinia lepidus, (Lath.), Temm. Pl. Col. livr. xxi. t. 126, f. 1, 2, ♂ ♀, "Java."

Cinnyris lepidus, (Lath.), Vieill., Galerie, i. p. 291, t. 177.

C. javanica, Horsf., Swains., Zool. Illus. 1st ser. iii. t. 121.

Anthreptes lepidus, (Lath.), Wallace, P. Z. S. 1862, p. 343, "Sula Islands, Celebes."

Cinnyris lepidus, Lesson, Manuel, ii. pp. 33 & 58.

C. ruficollis, Vieill., Enc. Méth. Ois. p. 600, "Les Grandes Indes," ♂ adult. (1823), descr. orig.

Hab. Java, Sumatra, Borneo, Malacca (S. Müller); Celebes (Müller, Wallace); Sula Islands, "does not reach the Moluccas" (Wallace); Arracan, Tenasserim (Blyth); Labuan (Motley and Dillwyn); Banjermassing (Schlater, P. Z. S. 1863, p. 220); Flores (Wallace); Siam (Gould, P. Z. S. 1859, p. 151); Cambodia (Mus. nostr. ♀).

Banjermassing, Flores, Malaccan, and Javan examples in my collection in no way differ. The bird figured by Temminck as the female I believe to have been a young male. The female seems to have the entire under surface of an uniform tint of yellow; whereas in the young male, whether with or without indications of the metallic plumage, the chin, throat, and upper breast are dirty white, contrasting with the clean greenish-yellow of the remainder of the lower plumage. These phases of plumage are analogous to what are found in *N. zeylonica*.

39. *CHALCOPARIA SINGALENSIS*, (Gm.), S. N. i. p. 964, no. 86, 1788, ex Brown; Walden, P. Z. S. 1866, p. 543.

Green Warbler, Brown, Zool. Ill. p. 82, t. 32. f. 2, descr. orig.

Certhia lepidus, Sparrm., var. β , Lath. Ind. Orn. i. p. 298, no. 60, ex Syn. Supp. i. p. 131, sect. 2, "Malacca," descr. orig.

Nectarinia phænicotis, Temm., Pl. Col. livr. xviii. t. 108. f. 1, ♂, "Java, Sumatra" (May 22, 1824); *op. cit.* livr. lxxv. t. 388. f. 2, ♀ (?); S. Müller & Schl., Verh. Nat. Gesch. Ned. Overz. Bez. Zool. Aves, p. 63.

Anthreptes rectirostris, (Shaw), Blyth, Journ. Asiat. Soc. Beng. x. p. 925, "Moulmein."

Anthreptes phaenicotis, Blyth, *op. cit.* xii. p. 979, "Tenasserim" (1843), descr. orig.

Chalcoparia cingalensis, (Gm.), Cab., Mus. Hein. i. p. 103, note.

Hab. Sumatra, Java, Borneo (Müller); Labuan (Motley and Dillwyn); Banjermassing (Selater); Moulmein (Walden); Tippera, Arracan (Blyth); Malacca (Moore).

Mr. Wallace informs me that this species has the tongue short, triangular, horny at the tip, and entire.

The following species, recorded as inhabiting the East, I am unable to identify:—

Certhia pusilla, L., S. N. ed. 12, i. p. 185, no. 3, ex Edwards, Nat. Hist. i. p. 26, t. 26. The type was brought from Holland preserved in spirits, and was said to have been sent from the East Indies. Seemingly a female or young male of an *Arachnechthra*.

The next three titles were given by Gmelin to species described by Brisson from the plates of Seba. Like most of Seba's figures they defy even approximate identification.

Certhia macassariensis, Gm., S. N. p. 480, no. 48; *Polytmus indicus*, Briss., Orn. iii. p. 675, no. 6, ex Seba, Thes. i. p. 100, t. 63, f. 3, "Bali et Macassar," descr. orig. Perhaps founded on a species of *Chalcostetha*.

Certhia indica, Gm., l. c. no. 49; *Polytmus cæruleus indicus*, Briss., *tom. cit.* p. 682, no. 10, ex Seba, Thes. ii. p. 20, t. 19, f. 2, "*Avis colubris orientalis*," descr. orig. Deep blue, throat white, bill yellow, tongue bifid.

Certhia amboinensis, Gm., l. c. no. 50; *Polytmus amboinensis*, Briss., *tom. cit.* p. 685, no. 12, ex Seba, Thes. ii. p. 62, t. 62, f. 2, Dark green; bill and under wing-coverts yellow; throat and breast red. Seemingly taken from Valentyn*, whose works I have not been able to consult.

Cinnyris leucogaster, Vieill., Nouv. Dict. d'Hist. Nat. xxxi. p. 515, "Timor" (1819), described from a specimen said to have been brought by Maugé from Timor. Dr. Pucheran (Rev. et Mag. de Zool. 1853, pp. 434–487) identified the type, then existing in the Paris Museum, with *Cinnyris thoracicus*, Less. (Tr. d'Orn. p. 297, 1831), the same individual having been described by both

* Oud en nieuw Oost-Indien, etc. (Dordrecht and Amsterdam: 1724–26).

authors. Lesson's account differs widely from that given by Vieillot; but neither agrees with any *Nectarinia* since discovered in Timor or other eastern locality. Dr. Pucheran in this instance does not assist us. It seems to be a good species, with yellow pectoral tufts, allied to *Chalcostetha insignis* (Jard.).

Cinnyris subflavus, Vieill., *tom. cit.* p. 494, "l'Inde" (1819). The type is no longer extant (*fide* Pucheran, *tom. cit.* p. 485). Apparently an *Æthopyga* of the subsection represented by *Æ. gouldiæ*, if not that bird itself.

Two species, *N. amasia* and *N. eximia*, are included by Mr. G. R. Gray in his lists of the birds of New Guinea and its Islands (P. Z. S. 1858, p. 190; 1861, p. 433) as inhabitants of New Guinea. I have failed in tracing the species to which the title *amasia* refers. Mr. G. R. Gray quotes no author; and Dr. O. Finsch (Neu-Guinea, p. 163)*, who attributes the title to Lesson, gives no reference. *N. eximia* is probably Temminck's species—*A. pectoralis* (Horsf.)—and has crept into the Tables by oversight.

Cinnyris eques, Less., has been generically separated both by its discoverer and by Reichenbach, from the true Sun-birds. The last author having taken it out of Lesson's incongruous genus *Phylidonyris* (Tr. d'Orn. p. 299, 1831) made it the type of his genus *Cosmeteira* (Nat. Syst. i. Supp.; Handb. p. 283, 1853). Lesson obtained his type-specimen in Waigiou. On comparing examples from Mysol a very considerable difference in the dimensions is found.

	Rostr. a nar.	Longitudo		
		Alæ.	Caudæ.	Tarsi.
Waigiou	·63	2·75	2·5	·75
Mysol	·48	2·25	1·75	·66

The tarsus in the Mysol species is not much shorter than in that of Waigiou, but is less robust. The colouring of the plumage only differs in being paler. I propose the title of *COSMETEIRA MINIMA* for this species.

This imperfect sketch of the eastern Sun-birds I shall con-

* Of the twenty species referred to *Nectarinia* by Dr. O. Finsch (*l. c.*) at least nine belong to the genus *Myzomela*. Dr. Finsch's Table of distribution, in other respects, requires revision.

clude with a Table showing those which were described by Linnæus and Gmelin. In the Twelfth Edition of the 'Systema Naturæ' (1766) we find the following :—

1. *Certhia* (*Arachnechthra*?) *PUSILLA*, "India," ex Edwards, ♀ vel ♂ juv. = — ?
2. *C.* (*Nectarophila*?) *CURRUCARIA*, "Zeylona," descr. orig. = *C. zeylonica*, L., ♀ vel ♂ juv. (?).
3. *C.* (*Arachnechthra*) *JUGULARIS*, "in Philippinis," ex Briss., ♂ adolescens.
4. *C.* (*Nectarophila*) *SPERATA*, "in Philippinis," ex Briss., ♂ adult.
5. *C.* (*Arachnechthra*?) *philippina*, "in Philippinis," ex Briss. = *C. JUGULARIS*, L., ♂ vel ♀ juv. (?).
6. *C.* (*Nectarophila*) *ZEYLONICA*, "Zeylona," ♂ adult., descr. orig.
7. *C.* (*Arachnechthra*) *LOTENIA*, "Zeylona," ♂ adult., descr. orig.

The following species were added by Gmelin in the Thirteenth Edition (1788) :—

1. *C.* (*Arachnechthra*?) *falcata*, ex Lath., patr. non indicat. = *C. LOTENIA*, L. (?).
2. *C.* (*Chalcostetha*?) *MANILLENSIS*, "Manilla," ex Montb. = *Nectarinia insignis*, Jard. (?).
3. *C.* (*Nectarophila*) *BRASILIANA*, "Brasilia"! ex Briss. = *Nectarinia hasseltii*, Temm.
4. *C. sperata*, L., var. β , ex Sonn. = *C. SPERATA*, L.
5. *C.* (—) ? *macassariensis*, "Baly et Macassar," ex Seba. = — ?
6. *C.* (—) ? *indica*, "India," ex Seba. = — ?
7. *C.* (—) ? *amboinensis*, "Amboina," ex Seba. = — ?
8. *C. zeylonica*, L., var. β , "Ins. Philippin." ex Lath., Syn. ii. p. 715, no. 13, var. A. = *C. ZEYLONICA*, L., ♂ adolesc. (?).
9. *C.* (*Arachnechthra*) *omnicolor*, "Zeylon," ex Seba. = *C. LOTENIA*, L.
10. *Motacilla* (*Chalcoparia*) *SINGALENSIS*, "Zeylon"! ex Brown.

III.—On a Fourth Collection of Birds from the Fantee Country.

By R. B. SHARPE.

(Plates II., III.)

THIS collection was received by Mr. Higgins in July 1869, and was immediately handed over to me for determination. Though scarcely so rich in species as the last*, it nevertheless contains many interesting birds, several of which are recorded from the Fantee Country for the first time; and these are, as in my former lists, distinguished by having a dagger (†) prefixed to their names.

†97. *CRATEROPUS REINWARDTI*, Swains.; Hartl., Orn. Westafr. p. 78.

One specimen. I do not think it has been met with before so far south.

†98. *CRINIGER PALLESCENS* (Hartl.); Finsch, Journ. f. Orn. 1867, p. 20.

One specimen. This is an aberrant *Criniger*, and might well be separated as a *Pyrrhura*.

99. *ANDROPADUS LATIROSTRIS*, Strickl.; Hartl., Journ. f. Orn. 1855, p. 360; *Id.*, Orn. Westafr. p. 87.

One specimen, identical with others in my collection from the Gambia.

100. *COSSYPHA CYANOCAMPTER* (Cab.); Hartl., Journ. f. Orn. 1855, p. 360; *Id.*, Orn. Westafr. p. 76.

A single specimen in bad condition. Also sent from Dabocrom by Heer Pel.

101. *COSSYPHA VERTICALIS*, Hartl., Orn. Westafr. p. 77.

Two specimens. Procured by Weiss at Elmina.

†102. *NECTARINIA SUPERBA* (Vieill.); Hartl., Orn. Westafr. p. 45.

The collection contains a single specimen of this most beautiful Sun-bird, which is quite new to the locality.

103. *NECTARINIA FANTENSIS*, sp. n.

N. supra chryseo-viridis, uropygio olivascens, rectricibus supra-caudalibus cupreo nitentibus; remigibus brunneis, extus oli-

* Cf. Ibis, 1869, p. 381.

vascente marginatis ; cauda suprà brunnea, subtus olivascens, rectricibus omnibus olivascente marginatis, extimis latius ; gulà flavidâ ; torque pectorali chryseo-viridi, dorso concolori ; infrà illam torque alterâ aurantiacâ ; pectore cinereo, flavo paullo lavato ; fasciculis axillaribus lætè limoneis ; hypochondriis sericeis olivascens ; abdomine pallidè limoneo, subcaudalibus saturatioribus ; tectricibus subalaribus sericeo-albis pallidè limoneo lavatis ; rostro nigro ; pedibus saturatè brunneis.

Above bright golden-green, becoming dull olive on the rump, and having a distinct coppery lustre on the upper tail-coverts ; the scapulars and upper wing-coverts uniform with the back, on the latter the least possible steel-blue lustre ; quills and primary-coverts dark brown edged externally with olive-green, the inner web white at the base ; tail dark brown above, olive-green beneath, and each feather edged externally with olive-green ; cheeks, ear-coverts, and a band across the breast golden-green, uniform with the back ; throat pale lemon-yellow, becoming olive-green towards the breast ; a second band across the breast, below the first, orange ; breast itself grey with a faint tinge of yellow on some of the feathers ; axillary tufts pure lemon-yellow ; flanks olive-yellow, abdomen pure lemon-yellow, and the under tail-coverts darker ; under wing-coverts silky-white tinged with yellow ; bill black ; feet very dark brown. Total length 4 inches, bill from front .5, from gape .65, wing 2.3, tail 1.2, tarsus .5, middle toe .4, hind toe .3.

Before finally deciding on the novelty of this pretty little Sun-bird, I took advantage of the kindness of Mr. D. G. Elliot to send it by him to Paris for the inspection of M. Jules Verreaux, who, as is well known, possesses the best collection of *Nectariniidæ* in the world ; and I was not a little pleased to have his testimony as to my bird being apparently undescribed. I must add that M. Verreaux possesses a specimen of this species from an unknown locality ; and I have also another, from Ashantee, given to me by Mr. Gould.

104. *CASSINIA FINSCHI*, sp. n. (Plate II. fig. 2.)

C. affinis C. rubicundæ, sed suprà fusca, caudâ fusco-brunneâ, rectricibus extimis ferè omninò, duabus proximis versus apicem, albis, tertiis etiam albo apicatis.

Above ashy-grey, inclining to rufous on the rump; quills brown, the inner web light rufous at the base, especially on the secondaries, the outer web of the primaries margined with deep rufous; tail dark brown, the two middle feathers light amber-brown, the outer ones for the most part white, brown at the base, and a little brown on the outer web, the next for the most part brown, white only towards the tip, while the next have only a white tip; throat, cheeks, and ear-coverts dusky-grey, mottled with pale rufous, darker on the latter; the rest of the under-surface of the body deep sienna; under wing-coverts for the most part pale rufous, marked here and there with dark brown; bill black; feet light brown. Total length 6·8 inches, of bill from front ·55, from gape ·85, wing 3·9, tail 3·2, tarsus ·7, middle toe ·6, hind toe ·35.

This new and interesting bird, which I have the pleasure of naming after Dr. Otto Finsch, is closely allied to *Cassinia rubicunda*, Hartl., from Gaboon. It is, however, easily to be distinguished:—

(1.) by the fuscous colouring of the upper surface, this being reddish-brown in the Gaboon species;

(2.) by the white on the outer tail-feathers, which also have white shafts underneath. In *C. rubicunda* the tail is dark brown edged with rich rufous, and has no white on it at all; the shafts also are yellowish underneath.

I now know three species of Dr. Hartlaub's genus *Cassinia* (Rev. Zool. 1860, p. 82), which may be conveniently disposed as follows:—

1. *Cassinia rubicunda*, Hartl., *ut suprâ*. *Rectrice extimâ rufobrunneâ*. Hab. Gaboon. (Plate II. fig. 1.)

2. *C. fraseri* (Strickl.). *Muscicapa fraseri*, Strickl., P. Z. S. 1844, p. 101; Hartl. Orn. Westafr. p. 95. *Rectrice extimâ pallide fulvo-brunneâ*. Hab. Fernando Po.

3. *C. finschi*, nobis *ut suprâ*. *Rectrice extimâ apicem versus albâ*. Hab. Fantee. (Plate II. fig. 2.)

In form *C. fraseri* is intermediate between the other two. The tail is fulvous-brown, much paler than in *C. rubicunda*, which has the tail reddish-brown; while *C. finschi* is easily distinguished from either by the tail being for the most part white.

†105. *CAMPEPHAGA XANTHORNITHOIDES* (Less.). *Campephaga nigra*, pt., Hartl., Orn. Westafr. p. 99.

One specimen. We have now three species of *Campephaga* recorded from Fantee, viz. the present species, the new *C. quiscalina*, Finsch (Ibis, 1869, p. 189), and the more common *C. phænicea*. Although I included the latter in my first list on the strength of a supposed female, I have since received several males, thus proving it to be a bird of frequent occurrence in the Fantee Country.

†106. *TELEPHONUS ERYTHROPTERUS* (Shaw); Hartl., Orn. Westafr. p. 106.

One specimen.

107. *LANIARIUS CHLORIS* (Valenc.). "*Laniarius peli*, Temm." Bonap., Consp. Av. i. p. 360; Hartl., Journ. f. Orn. 1855, pp. 358, 360; *Id.*, Orn. Westafr. p. 109.

A single specimen agreeing with others in my collection from Gaboon.

108. *DRYOSCOPIUS GAMBENSIS* (Licht.); Hartl., Orn. Westafr. p. 110.

One specimen. Sent also by Weiss from Elmina.

109. *DRYOSCOPIUS LEUCORHYNCHUS* (Hartl.), Orn. Westafr. p. 112.

Two females. This extraordinary Bush-Shrike seems to be a link between *Dryoscopus* and *Dicrurus*, resembling the latter in the sombre black hue of the plumage, but at the same time being a typical Bush-Shrike in the laxity of the feathers. The sexes differ, the males having the bill white and the females black. It was originally discovered at Elmina by Weiss.

†110. *PYRENESTES COCCINEUS*, Cass.; Hartl., Orn. Westafr. p. 139.

A female. This species was described by Mr. Cassin from a specimen in the Philadelphia Museum from Monrovia on the Liberian Coast. It has since been received from Gaboon by MM. Verreaux, and now again turns up in Fantee. The nearly allied species *P. ostrinus* (Vieill.) has occurred in Ashantee, and may therefore be expected from Fantee also.

111. *VIDUA PRINCIPALIS* (Linn.); Hartl., Orn. Westafr. p. 136.

One specimen. Sent also from Accra by Mr. Fraser, and met with by Dr. Gordon at Cape-Coast Castle.

112. *HYPHANTORNIS LUTEOLA* (Licht.); Hartl., Journ. f. Orn. 1855, p. 360; *Id.*, Orn. Westafr. p. 123.

One specimen. Also procured by Heer Pel in Ashantee.

113. *EUPLECTES AFER* (Gm.), Syst. Nat. i. p. 857 (1788). *Loxia melanogastra*, Lath., Ind. Orn. i. p. 394 (1790). *Euplectes melanogaster*, Hartl., Orn. Westafr. p. 128.

Two specimens. Gmelin's name, founded on plate 24 of Brown's 'Illustrations of Zoology,' has undoubted priority over that of Latham, also founded on the same plate.

114. *PYTELIA HYPOGRAMMICA*, sp. n. Qu. *Pytelia afra*, Hartl., Orn. Westafr. p. 145 (*nec* Gm.)?

P. schistacea: fronte, genis et gulâ latè coccineis: rectricibus alarum aurantiacis, rubro lavatis: remigibus cinerascenti-brunneis, pogonio externo aurantiaco marginatis: uropygio latè coccineo: rectricibus intermediis coccineis uropygio concoloribus, reliquis coccineo marginatis præter extimas omnino brunneas; subtus cinerascenti-schistacea, pectore angustioribus abdomineque latioribus fasciis albis vermiculatis: rostro nigro: pedibus pallide brunneis.

Above slaty-grey; forehead, cheeks, ear-coverts, throat, rump, and upper tail-coverts rich crimson; wing-coverts orange, the lesser ones tinged with red; primary coverts and quills dark brown, edged externally with orange; the two middle rectrices crimson, like the rump, the rest blackish brown, margined with crimson, except the two exterior, which are entirely brown; whole under surface dark slaty-grey, with transverse white vermiculations, broader on the abdomen; bill black; feet light brown. Total length 3·5, bill from front ·45, wing 2·2, tail 1·5, tarsus ·6 in.

There can be little doubt that this bird is the same as that described as "*Pytelia afra* (Gm.);" by Dr. Hartlaub (*l.c.*); for I took advantage of Mr. Elliot's kindness to send the bird to Paris. After comparing it with the specimen in the Paris Museum, which formed the subject of Dr. Hartlaub's description, Mr. Elliot and M. Jules Verreaux came to the conclusion that

my bird was the same; but I cannot agree that it can be in any case the *Fringilla afra* of Gmelin, founded on Brown's plate (Ill. Zool. pl. 25) of the "Little Red-faced Loxia from Angola," and described as follows:—

"Bill yellowish-white, mixed with a little red; cheeks tinged with crimson; plumage, with coverts of wings and scapularies, entirely of a deep dull green; primaries dusky, exterior edges of a dull orange; tail of a dull crimson; legs of a yellowish colour."

Mr. Elliot thinks that this may be the young of my bird, and that the Paris specimen is in an intermediate stage; but, whereas the latter bird agrees very well with my bird, Brown's figure does not agree at all, the species there represented wanting entirely the orange wing-coverts and the vermiculations on the under-side, characters which might reasonably be expected to be present in some slight degree even in the youngest stage.

†115. *ORIOLOUS NIGRIPENNIS*, Verr.; Hartl., Orn. Westafr. p. 82.

One specimen.

†116. *ORIOLOUS BRACHYRHYNCHUS*, Swains.; Hartl., Orn. Westafr. p. 81.

One specimen.

117. *TURTUR ERYTHROPHRYS*, Swains.; Hartl., J. f. O. 1855, p. 361; *Id.*, Orn. Westafr. p. 195.

One specimen.

†118. *PSITTACUS ERYTHACUS*, Linn.; Hartl., Orn. Westafr. p. 166.

A single specimen of the well-known Grey Parrot.

119. *XYLOBUCCO SCOLOPACEUS* "(Temm.)," Bonap., Consp. Av. i. p. 141; Hartl. J. f. O. 1855, pp. 359, 361; *Id.*, Orn. Westafr. p. 174. *Bucco stellatus*, Jard. & Fraser, Contr. Orn. 1851, p. 155.

Three specimens. Mr. Fraser (P. Z. S. 1843, p. 4, note) mentioned this Barbet, but did not give it a name. Afterwards Sir W. Jardine called it *B. stellatus* in 1851; but in 1850 Bonaparte had characterized it under a MS. name applied by

Temminck to a specimen sent by Heer Pel to the Leyden Museum, and therefore the name of the Prince has priority.

120. *COCCYSTES CAFFER*, Licht., Cat. Rer. Nat. Hamb. 1793, p. 14, no. 155. *Oxylophus afer*, Steph., Gen. Zool. ix. pl. 24. *O. ater*, Hartl. (*errore*), J. f. O. 1855, p. 361; *Id.*, Orn. Westafr. p. 188.

One specimen. Sent by Heer Pel from Ashantee.

121. *CHRYSOCOCCYX SMARAGDINEUS* (Swains.); Hartl., J. f. O. 1855, p. 361; *Id.*, Orn. Westafr. p. 191.

One specimen. Procured by Heer Pel in Dabocrom.

†122. *CHRYSOCOCCYX KLAASI* (Vieill.); Hartl., Orn. Westafr. p. 190.

One specimen.

†123. *CHRYSOCOCCYX AURATUS* (Gm.); Hartl., Orn. Westafr. p. 191.

One specimen.

124. *MILVUS PARASITICUS* (Daud.); Hartl., Journ. f. Orn. 1855, p. 360; *Id.*, Orn. Westafr. p. 10.

One specimen. Sent from Fantee also by Heer Pel.

125. *ASTUR MACRURUS*, "Temm."; Hartl. J. f. O. 1855, pp. 353 (*descr. orig.*) et 360; *Id.*, Orn. Westafr. p. 11. (Plate III.)

Of this fine Gos-Hawk the collection contains a single adult specimen. The original type was sent to Leyden by Heer Pel from Dabocrom, and was furnished by Temminck with a MS. name which was published for the first time by Dr. Hartlaub (*l. c.*) in 1855. The present specimen has been secured for the Norwich Museum, thus adding another to the long list of rarities contained therein. The following is an exact description of the adult bird, represented in the accompanying plate (Plate III.).

Above blue-grey, lighter on the head and nape; the upper tail-coverts pure white, forming a conspicuous patch; quills externally deep brownish-grey, with broad obscure black bands; beneath a little paler grey, pure white at the base, banded with brownish-grey, these bands being very narrow at the base of the quill and gradually getting broader towards the tip of the feather; tail very long, graduated, black above, paler blackish-

grey beneath, all the feathers irregularly banded and broadly tipped with white, the bands at the base of the middle feather being slightly narrower; throat whitish; rest of the under surface of the body, with the under wing-coverts, dull leaden-grey; vent and under tail-coverts white; feathers of the leg dull grey; beak and talons black; feet yellow. Total length 24 inches, beak from front 1.4, wing 12, tail 13, tarsus 3, middle toe 1.8, hind toe 1.

Mr. Gurney informs me that in the Leyden Museum, besides the young specimen which formed the type of the species, there is another, which has the upper parts of the same colour as the specimen just described, but the under parts are of a rich rufous, except the throat, which is white.

126. ACCIPITER ZONARIUS, "Temm.;" Hartl. J. f. O. 1855, p. 360; *Id.*, Orn. Westafr. p. 15. "*Astur macrocelides*, Temm.," Hartl., Orn. Westafr. p. 12 (*juv.*).

A single adult specimen. This beautiful species was procured by Heer Pel on the Rio Boutry. Mr. Gurney tells me that it only differs from the southern *A. tachiro* in the much more rufous colouring of the under parts in the adult; and in this respect the Abyssinian form to which Rüppell gave the name of *A. unduliventris* appears to hold an intermediate position.

IV.—*A list of the Birds of Turkey.* By H. J. ELWES, F.Z.S., late Captain Scots Fusilier Guards, and T. E. BUCKLEY, B.A., F.Z.S.

It was only after some hesitation that we decided on offering this paper to the readers of 'The Ibis' under the above title, as it is obvious that, with such scanty information as we at present possess, a catalogue of the species found in a country so extensive as that known under the name of Turkey in Europe must be very incomplete.

Of the ornithology of the north-western and central provinces, next to nothing seems to be known; and the rest of the country has been only partially and imperfectly explored by a few Englishmen, most of whom are included in the brotherhood of 'The Ibis.'

As, however, no complete catalogue has yet been attempted, we have collected all available information on the subject, including the various notices which have appeared at different times in this Journal and elsewhere*; and hoping that an imperfect list will be considered better than none at all, we beg the utmost indulgence on the part of our readers.

A great many of our notes on the birds found in the neighbourhood of Constantinople are derived from two ornithologists who reside on the Bosphorus, and to whom our best thanks are due for the kindness with which they gave us all the information in their power.

M. Amédée Alléon, a French gentleman who has lived long in the country, has for the last four or five years been making a collection of birds, which he himself mounts in a most artistic manner, hardly to be surpassed even by Mr. Hancock; and though he has not as yet paid much attention to the smaller species, he, with M. Jules Vian, has contributed to the 'Revue de Zoologie' several papers on rare birds which have come under their notice. Mr. T. Robson, who is known in England as the discoverer of *Acredula tephronota* (Günther)†, has also made a large collection, principally of *Insessores*, and has sent to England

* H. M. DRUMMOND, 'List of the Birds observed to winter in Macedonia, during a two months' Shooting Excursion in the Interior during the winter of 1845-46.' Ann. & Mag. Nat. Hist. xviii. (1846) pp. 10-15.

T. L. POWYS, 'Notes on Birds observed in the Ionian Islands, and the Provinces of Albania proper, Epirus, Acarnania, and Montenegro.' Ibis, 1860, pp. 1-10, 133-140, 228-239, 338-357.

W. H. SIMPSON, 'A Fortnight in the Dobrudscha.' Ibis, 1861, pp. 361-374.

C. FARMAN, 'On some of the Birds of Prey of Central Bulgaria.' Ibis, 1868, pp. 406-414, 1869, pp. 199-204.

A. ALLÉON, 'Note sur deux espèces d'oiseaux.' Rev. et Mag. de Zool. 1867, pp. 3-7.

A. ALLÉON et J. VIAN, 'Des migrations des oiseaux de proie sur le Bosphore de Constantinople.' Rev. et Mag. de Zool. 1869, pp. 258-273, 305-315, 342-348 (still in course of publication).

It may prevent future mistakes to remark that the first three of the gentleman above mentioned have since changed their names. Capt. Drummond has become Col. Drummond-Hay, Mr. Powys Lord Lilford, and Mr. Simpson Mr. Hudleston.

† Ibis, 1865, p. 95, pl. iv.

several series of specimens which give us a good idea of the ornithology of the Bosphorus and its immediate neighbourhood.

We have thought it best to include in our list such additional species as were observed in Epirus by Lord Lilford, since they fairly come within the confines of Turkey.

The chief thing which strikes a naturalist travelling in Turkey, is the immense number and variety of birds of prey which are seen everywhere. Owing to the superior interest which this order always possesses in the eyes of those new to southern Europe, and the short time which we were able to devote to any particular district, our own notes on the smaller birds are very meagre; and we are indebted to Mr. Robson for filling up many of the blanks which would otherwise have been left.

A more careful and systematic exploration of the country will doubtless add many species to the list, which at present includes only those birds for whose occurrence we have good authority; and when we consider the great extent of the country, from the snowy mountains of Bosnia to the almost tropical plains of Macedonia, it is probable that Turkey will prove to possess one of the richest avifaunas in Europe.

On the 1st of February 1869, we left Athens on horseback, and, as the road was infested by brigands, were obliged to take a guard of *gendarmes* as far as Chalcis. For about twenty miles our route lay over the plain of Attica, where we saw but little bird-life, and then entered the mountains, here covered with a species of fir which resembles *Pinus austriaca*, and produces a great deal of turpentine. The next day we crossed a pass in which the snow lay deep, and descended into Bœotia, which is a hilly country covered with evergreens and underwood, and very thinly inhabited. Here we saw great numbers of Eagles, *Aquila navia* and *A. heliaca*, and Kites, *Milvus ictinus*, but very few other birds. Greek Partridges, *Caccabis græca*, have become scarce of late years, owing to the number of firearms in the country; and even in the market at Athens there were very few. The island of Eubœa, where we remained several days, possesses some beautiful scenery, and would probably be found to contain many rare birds; our time,

however, was occupied in vainly trying to force a road through the snow on the mountains, which had not been so deep for many years. *Circus swainsoni* and *C. æruginosus* were very common here, but birds of prey generally are not so numerous in Greece as in Turkey.

We reached Volo, in Thessaly, on the 8th of February, but, owing to the political differences which then existed between Greece and Turkey, we were not allowed to land. Luckily, however, a French steamer was lying in the bay ready to start; so we went on board, and arrived next day at Salonica, a large and busy town inhabited by Jews, Turks, Greeks, and Italians. We made preparations for starting at once into the interior—a plan which had been strongly recommended by Col. Drummond-Hay, and spent a month agreeably in shooting and collecting. Comfortable quarters were always found either in villages or monasteries; and as our cook was a tolerable hand at bird-skinning, we got a good many rare specimens, as well as some fair sport in the mountains. I would, however, warn any one who thinks of going to Turkey of the difficulty of getting good powder, as the importation of it is strictly prohibited, and the native manufacture is dear and very bad.

Bears, red deer, roes, and wild boars are found in this province; and chamois are not uncommon on Mount Olympus. Wild fowl are very numerous in the gulf of Salonica and marshes of the Vardar and Karasmak rivers, which in summer would well repay a more careful exploration.

On leaving Salonica we stopped a few days in Constantinople, where we had the pleasure of seeing M. Alléon's collection, and visited his residence in the Forest of Belgrade, which in summer is an excellent place for birds (*cf.* Rev. Zool. 1869, p. 259). As, however, the season of their passage was not yet come, we hurried on to the Crimea, which, though very interesting to a soldier, is in early spring but a barren country for a naturalist.

Little Bustards were feeding among the ruins of the Mamelon, and Owls had taken the place of Russian sharpshooters in the quarries and ravines around the town of Sevastopol; but Larks (*Alauda calandra*, *A. cristata*, and *A. brachydactyla*) were the only birds which appeared very common. We returned

from the Crimea through Odessa, where there is a neglected museum of natural history, and landed at Kustendji on the 1st of April.

Here we found Dr. Cullen, who most kindly gave us all the information in his power, and enabled us to make some interesting and highly successful excursions in the neighbourhood, where we found some of the rarest birds in Europe breeding in abundance. Our time, however, was too limited to enable us to explore the marshes and islands at the mouth of the Danube; so, after disposing of an exorbitant innkeeper by a little summary Turkish justice, we went on by Tchernavoda and Rustchuk to Varna, in which neighbourhood we expected, from Mr. Farman's account, to do great things. The extent of wooded and broken country near the railway was so great, and our time so short, that we were not so successful as in the Dobrudscha, where, owing to the open country and scarcity of trees, bird's-nesting is an easy matter.

The country about the Devna lakes was very picturesque, and we enjoyed such beautiful weather that we left it with much regret; but as we were obliged to be in England early in May, we could not remain more than a fortnight, and returned up the Danube with all haste to Vienna.

1. *VULTUR MONACHUS*, L. Black Vulture.

We found this bird common in Macedonia, where, during the winter months, it frequents the plains. We often saw five or six soaring about together in search of food; but they seem to go a long while without eating, especially during the breeding-season. We only once found a nest in Macedonia; and this was on a low range of cliffs overlooking the plain near Verria. We went there on February 27, and saw several Griffons about the rocks, which did not appear to have laid as yet; but a Black Vulture was sitting in a hole, and flew away on my approach. One of us climbed up with some difficulty, and found a single round white egg—different from any we obtained afterwards, and laid at least two months earlier, as those we took in the Dobrudscha were all fresh in the beginning of April. In Bulgaria they are still more common; and though they do not breed in colonies like

the Griffon, we found five nests within an hour's walk on the borders of a large forest near Babadagh. Most of these nests were placed on stunted oak-trees, the tops of which they completely covered. Out of about twenty nests only three contained two eggs each, all the rest but one; and though they are not so brightly coloured as some Spanish specimens we have seen, many of them are richly marked with brown. On this point we cannot agree with Mr. Tristram (*Ibis*, 1865, p. 246), as we never took or saw a Griffon's egg approaching in richness of colour that of an average Black Vulture. They are also longer and more pointed than is usual with the eggs of raptorial birds. The Black Vulture, unless sitting hard, will not allow herself to be approached within shot, but goes off quickly and, after flying round once or twice, generally disappears.

With a good glass she can be seen on the nest at a great distance; and we saved ourselves much time in this way, as we never went to a nest unless the bird was on it.

Near Pravidy and Schumla the Black Vulture is not so numerous as the Griffon, and, though there are many suitable rocks in that country, always makes its nest on a tree.

2. GYPS FULVUS (Gm.). Griffon-Vulture.

Both in Macedonia and Bulgaria we found this splendid bird common, but nowhere so numerous as in the Pravidy valley, and a range of rocks about two miles from the station at Schumla-road. On the 18th of April we went there, taking ropes and men to assist us, as we expected to have much difficulty in getting at the nests. The Griffons, however, which had probably been hardly ever disturbed, were obliging enough to make their nests on low ledges, some of which were perfectly easy of access; and had we been three weeks earlier, we might have got twenty or thirty eggs. Most of the young birds were already hatched; and we most decidedly differ from what Mr. Farman says (*Ibis*, 1868, p. 408) as to the time of the Griffon's laying, for our experience is to the effect that the Black Vulture is at least a fortnight later than the other. In the sandstone cliffs which hem in the Pravidy valley, many caves and holes have been excavated as places of refuge in former days, and are now

tenanted by Griffons and Eagle-Owls. One of these, into which one of us was let down by a rope, formed a perfect chain of galleries and chambers, and a most comfortable nursery for the young Griffons, which were gaping and sprawling about the floor.

Another "Griffonry" was the immense rock from which the monastery of Kalipetra takes its name, in the mountains above Verria; but it was always a mystery to us how the birds managed to sustain their existence. Not even Mr. Tristram's in the Wady Hamam (Ibis, 1865, p. 248) could have been on shorter commons; and whenever we killed a deer, they would assemble by dozens round the gralloch, which could not have afforded them a mouthful a piece. In the Dobrudscha, the Griffon is more scarce; but a few are always found about the cliffs of the Danube.

3. GYPAETUS BARBATUS (L.). Læmmergeyer.

We only observed this bird in the mountains of Macedonia, where it seemed to be not uncommon; but as the females were probably sitting at this time, they were not seen very often. We never discovered the whereabouts of their eyries; but the shepherds say that they are very destructive to the young lambs and kids. In the museum at Athens, there are some very fine specimens obtained on Mount Parnassus.

4. NEOPHRON PERCNOPTERUS (L.). Egyptian Vulture.

We only saw one or two of these birds in Greece, and in Macedonia they are by no means common during the winter months; but in Bulgaria they are plentiful. The "*Ak baba*," as it is called by the Turks, does not associate with other Vultures during the breeding-season, and makes a nest in a low range of cliffs, generally not very difficult of access. It does not breed until the end of April, when the Griffons have hatched, and lays its one or two richly marked eggs in a warm nest well lined with wool, rags, and hair.

M. Alléon says that the Egyptian Vulture arrives in spring and remains only to the beginning of autumn, but is found during that time in great numbers in the town of Constantinople. It seems to distinguish between the Turks and Christians; for in Pera, which is chiefly inhabited by foreigners, it

does not breed; while in Stamboul it builds on the cypresses, mosques, and roofs of the tanneries, where it is never molested by the Mussulmans, and repays its hospitable treatment by carrying off the garbage in the streets.

The young birds leave the country as soon as they are able to fly, and do not return until they have acquired the adult plumage, which is probably not until they are two years old.

5. *AQUILA CHRYSÆTUS* (L.). Golden Eagle.

So far as our experience goes, the Golden is by no means so common as the Imperial Eagle; and we never obtained a specimen or found a nest. It occurs, however, in most parts of the country, as is testified by Col. Drummond-Hay, Mr. Farman, and others, and probably is more numerous in the mountain-districts.

6. *AQUILA HELIACA* (Savigny). Imperial Eagle.

This eagle is surprisingly common both in Macedonia and in Bulgaria, and is essentially a lover of the plains, where it may be seen hunting for food in the manner of a Buzzard or perched on a solitary tree. Hardly a day was passed when travelling over the great plains without finding some nests of this bird, which were often quite close to a well-frequented road. Many a hard and unsuccessful climb they gave us in the early part of the season, from their habit of sitting on the nest for several weeks before laying; and it was some time before we could resist the temptation of going up when a magnificent Eagle quietly sailed off within a few yards.

For as long as six weeks this continued, and we began to despair, till on the evening of April 2nd, when, at a Tartar village where we were to sleep, a great Eagle flapped off a nest on a stunted willow not a hundred yards from the house. One of us was very soon up, and found a beautiful egg covered with blotches of lilac and red, quite the finest we ever took. After this we found them frequently in isolated trees or bushes in the open country, only once in a wood. The nests are moderately large and flat, well lined with wool and rubbish, and contain from one to three eggs, which are usually much less marked and blotched than those of the Golden Eagle.

The male bird takes his turn at incubation, while the female goes in search of food ; and they sometimes leave the nest entirely for some time. The young are hatched at the end of April or beginning of May, and do not remain in the country very long, as we never observed an Imperial Eagle in immature plumage during the whole of our journey.

In the evening these Eagles roost with Kites and Falcons in clumps of trees in the open country ; and by waiting at these places just before dark we could always obtain specimens, as there were often six or seven in one tree. In the Dobrudscha it was by no means easy to distinguish this Eagle from the dark form of the Tawny Eagle (*A. naevioides*) which is found there ; and the eggs vary so much in size that in some instances they might easily be mistaken for those of the latter.

7. AQUILA NÆVIOIDES, Cuv. Tawny Eagle.

Our attention was first called to this bird by M. Alléon, who possessed in his collection a large number of specimens killed by him during the passage, at Buyakdere, on the Bosphorus. In the 'Revue de Zoologie' for 1866 (pp. 273-277, pl. 20) will be found an illustrated article by him on this Eagle, which he then supposed to be the *A. mogilnik* of S. G. Gmelin. Further on in the same volume (pp. 356-359) M. Jules Vian, writing on the same subject, attempts to show that M. Alléon's Eagle is the *A. clanga* of Pallas, but gives it as his opinion that *A. clanga* is not a good species and must be regarded as a local form of *A. naevioides*: in the same periodical for the following year, 1867 (pp. 129-137), will be found an excellent paper by him on this subject. M. Alléon's kindness has enabled us to submit two specimens of this bird to Mr. Gurney, who was at first of opinion that they must be referred to some unnamed species, as he had never seen any like them before ; but after going most carefully into the subject, and comparing the skins with an African specimen of *A. naevioides* and an Indian one of *A. fulvescens*, he wrote as follows :—

“Notwithstanding the remarkable difference of coloration in each of the three specimens, they agree so closely in other respects that (greatly against my preconceived opinion) I am now

disposed to look upon them all as belonging to the same species, viz. *Aquila navioides*, of Cuvier. I moreover discovered in the Eagle from the Bosphorus two small scapular feathers which I had previously overlooked. These confirm me in this opinion, as they are parti-coloured, a portion of the feather being purplish-brown and the other portion being rufous, which is an especially characteristic form of coloration in the typical African adults of *A. navioides*. This, I think, shows that the Bosphorus birds are not in adult dress; and I may, with reference to my former opinion that they belonged to a distinct species, add that I never before saw any specimens of *A. navioides* in the same plumage as these Eagles obtained on the Bosphorus."

M. Alléon also thinks that he has never obtained an adult specimen out of the large number he has seen, and has never met with any of a tawny colour, though he finds specimens in the moult having every appearance of youth with yellowish marks on the neck, wing-coverts, breast, abdomen, and tarsal plumes, in the same manner as the immature *A. heliaca* is marked.

They are extremely abundant at the season of the passage in March and April, and may be obtained in large numbers by waiting on one of the high hills near the Bosphorus when the wind is south-east, but do not return by the same route in the autumnal migration.

8. *AQUILA NÆVIA* (J. F. Gmelin). Spotted Eagle.

Most abundant in the wooded plains of Macedonia, which swarm with birds of prey, White-tailed and Spotted Eagles being the commonest. We obtained a good many specimens by shooting them at roost, as, though a dull and sluggish bird, they are not easy of approach at other times. All that we got were rather larger than specimens from North Germany, but exactly similar in plumage. In the forest of Babadagh, in Bulgaria, they are common, also in the forest of Belgrade, near Constantinople, where they breed. In the open country of the Dobrudscha the Spotted Eagle seems to have totally different habits (*cf.* Ibis, 1861, p. 368), as it frequents and breeds on the bare downs. Specimens that we shot here were larger and

stouter than the woodland birds, and came very near the dark form of *A. naevioides* just mentioned, which also breeds on the ground in the plains of South Russia and, probably, here. A series of Imperial, Tawny, and Spotted Eagles could be produced running almost imperceptibly into each other in size, and nearly similar in colour; and when these birds are flying at a distance there is great difficulty in deciding the species, though an adult of *A. heliaca* will always show the golden head and white scapular. With reference to the larger form of Spotted Eagle, to which Pallas's name of *Aquila clanga* is usually referred, Mr. Gurney says:—

“These two races (viz. the North German and South Russian) bear a very similar relationship to each other to that which exists between *A. naevioides*, of Africa and Spain, and the smaller *A. fulvescens*, of India.”

M. Vian, in one of the papers before mentioned (Rev. Zool. 1867, p. 129), attempts to show that the name of *A. clanga* was intended by Pallas for the Russian form of *A. naevioides*; but Mr. Gurney says:—

“I still retain my opinion that the bird described by Willughby and Brisson, which was regarded by Pallas as identical with his *Aquila clanga*, is intended by each of these authors for either the smaller or the larger race of *A. naevia*, and has nothing to do with *A. naevioides* as suggested by M. Vian.”

Two adult males, which were killed by M. Alléon in 1865, were of a pale tawny colour, much the same as African specimens of *A. naevioides*, but they had some new feathers of a chocolate-brown, and were undoubtedly specimens of *A. naevia*.

9. AQUILA PENNATA (J. F. Gmelin). Booted Eagle.

We never observed this species in Macedonia or Greece, though it is probably found in the wooded parts of the country; but in the east of Turkey it is not uncommon, and breeds regularly near Constantinople. M. Alléon has three times taken the nest in the forest of Belgrade, and was kind enough to present us with some of the eggs, which are exactly like specimens from Spain. He informs us that it passes in immense flocks over the Bosphorus from Asia into Europe about the middle of April,

and is easily shot, both in the adult and immature brown plumage, by waiting on the tops of the hills near Buyukdere. We saw this bird in the forest near Babadagh, and were told it bred there, also near Pravidy. We have no doubt the Editor of 'The Ibis' is right (Ibis, 1869, p. 203, note) in supposing that Mr. Farman mistook this species for the Rough-legged Buzzard; it may, however, be distinguished on the wing by its more buoyant flight and the absence of the white rump.

10. *AQUILA BONELLII* (Temm.). Bonelli's Eagle.

We have no authentic instance of this bird's occurrence in the east of Turkey, though Mr. Hudleston says he observed it on the Danube, and Lord Lilford found it in Albania.

11. *CIRCAETUS GALLICUS* (J. F. Gmelin). Short-toed Eagle.

We never obtained a specimen, but are almost positive of its occurrence in Bulgaria, and M. Alléon has found it breeding in the forest of Belgrade. It is very numerous on the Bosphorus during the migration.

12. *HALIAETUS ALBICILLA* (L.). White-tailed Eagle.

Very common in Macedonia and all along the coasts of the Black Sea, being found also at a considerable distance in the interior. In the great marshes of the Karasmak, which are surrounded by swampy forests of willow and black poplar, the White-tailed Eagle seems to find a congenial abode, though a very different one from the precipitous headlands of the Hebrides, where we had first made its acquaintance. It is here so plentiful that we found three nests within half a mile of each other, all of which were tenanted, and there were numerous others at a short distance.

In these dismal woods, which are interspersed with patches of high reeds, with dense brambles and underwood in the dryer places, the water is often up to one's waist. Many sorts of wild fowl literally swarm, and attract a corresponding number of birds of prey. Vultures, Eagles, Falcons, Buzzards, Harriers, and Owls were so numerous that in the evening nearly every tree was tenanted by some great bird which had come from the surrounding swamp to roost. Among these, Spotted and White-tailed Eagles were most common; and the latter were all breed-

ing in the month of February. Some pairs, indeed, must have commenced nidification as early as Christmas; for a nest was found on the 17th February, containing two young ones at least a week old. The nests were usually placed on large willows or poplars, and from these eyries we obtained a view which seldom gladdens the eye of a naturalist. Here and there one could see small parties of Cranes stalking about amongst the bog-myrtle bushes, Great White Herons in snowy grandeur wading solemnly in the reeds, Pygmy Cormorants sitting on the branches which overhung the water, flocks of Little Gulls hawking like Swallows in the bright sunshine, Ducks of a dozen species flying about in every direction, Smews and Grebes diving in the streams which intersect the marsh, Harriers and Eagles sailing over the tops of the reeds and striking occasionally at some unwary Duck; while waders and warblers of many kinds frequented the outskirts of this ornithological paradise. Indeed the days that we spent at Luko Monastir, a small monastery on the edge of this morass, were among the pleasantest of our tour; and what with Pheasant- and Duck-shooting in the mornings, nest-ing and Eagle-shooting in the afternoons, and skinning in the evenings, our time was fully occupied.

? 13. *HALIAETUS LEUCORYPHA* (Pall.). Pallas's Sea-Eagle.

The only authority we have for including this bird in our list is that of Mr. Farman (*Ibis*, 1869, p. 202); and though we searched all the localities he mentions, we never observed it. M. Alléon has never obtained it; but as it is known to breed in the Crimea (*Zoologist*, 1857, p. 5354), it doubtless wanders occasionally to the Turkish coast of the Black Sea.

14. *PANDION HALIÆTUS* (L.). Osprey.

Not uncommon near Varna, and breeds in the woods about Gubedjie, but never observed elsewhere by us. It is said to be common about the mouth of the Danube, and is found by M. Alléon to be resident in the forest of Belgrade.

15. *BUTEO VULGARIS*, Bechst. Common Buzzard.

Not uncommon in the wooded districts of Macedonia and Bulgaria.

16. *BUTEO FEROX* (S. G. Gmelin). Long-legged Buzzard.

We never obtained a specimen of this fine bird; but M. Alléon informs us that one was killed in the winter of 1856. Mr. Robson has also procured it.

17. *BUTEO DESERTORUM* (Daud.)*. Desert-Buzzard.

Great numbers of this species have been observed by M. Alléon during the spring and autumn migration at Buyukdere, and we saw several specimens in his collection which agree in every respect with examples from North Africa. He also tells us that he has twice found the nest in the Forest of Belgrade. Most of these birds probably pass through Turkey to Russia, where they are said to breed commonly†; but a few, tempted by the beautiful woods on the Bulgarian coast, remain during the summer. A nest, from which the female bird was shot, was discovered by one of us on April 24 near Sindal, a village about twenty miles from Varna. It was lined with moss and green leaves, and contained three eggs, which differed but little from those of the Common Buzzard. The cry is a shrill melancholy whistle, not unlike that uttered by that species.

18. *ARCHIBUTEO LAGOPUS* (L.). Rough-legged Buzzard.

Occasionally found near Constantinople in winter. It has been killed by Mr. Robson, and it is also contained in M. Alléon's collection.

19. *PERNIS APIVORUS* (L.). Honey-Buzzard.

Common during the migration on the Bosphorus, and, no doubt, breeds regularly in the forests of Northern Turkey.

20. *MILVUS ICTINUS* (Savigny). Kite.

Very numerous in Macedonia, but not seen by us in Bulgaria or near Constantinople, where it is replaced by the Black Kite. About the villages in the plains of Macedonia a number of Kites may always be seen hovering in search of offal; but, though never molested by the people, they are very wary. In the evening they resort to small clumps of trees to roost in company with

* With respect to this species and its identity with *B. cirtensis*, see Mr. Gurney's remarks (*Ibis*, 1862, pp. 361-363).

[*Cf.* *Journ. für Orn.* 1855, p. 94.—ED.]

Eagles and Falcons, but are very suspicious and shy, and will not settle down until it is quite dark if they have been disturbed by any one passing. We never saw them in the mountains or woods, but always about the sheepfolds and houses in the plain.

21. *MILVUS MIGRANS* (Bodd.). Black Kite.

Extremely common on some parts of the Danube, where it breeds on the islands, which are covered with a dense thicket of willows and a few poplars. In these trees it begins to build in April, and lays, about the first week in May, in a very small nest, which at first sight would not seem large enough for the eggs of a Crow. It is also found in the interior of the country and in the large towns, where it acts as scavenger.

Two pairs of Black Kites had made their nest on a high plane-tree in one of the busiest streets in Pera, and seemed quite insensible to the noise which was going on all day around them*.

22. *FALCO SACER* (J. F. Gmelin). Saker.

As the Peregrine Falcon loves the precipices of the sea-coast or the neighbourhood of large inland waters, and the Lanner prefers the rocky gorges of a desert region, so the Saker finds a congenial home on the open downs and brush-covered hills which cover a large portion of the north of Turkey. In some localities, where the country is of this nature, it is a common bird—so much so that we obtained no less than five of its nests in a very few days.

Its habits in the breeding-season have been well described by Mr. Farman (*Ibis*, 1868, p. 459); so we will not further enlarge upon them, except to say that it often chooses an old Vulture's or Eagle's nest, in the centre of which a hole is scratched for the eggs. The male bird sits quite as often as the female; and both are usually seen in the neighbourhood of the nest. Four

* *MILVUS GOVINDA*, Sykes. Pariah Kite.

M. Alléon informs us that he has recently obtained two immature specimens of this Indian species near Constantinople during the autumn migration; and though one would have expected that they might rather have been *M. ægyptius*, he appears quite confident that he is not mistaken. It has, we believe, never been recorded previously as occurring in Europe.

is the usual number of the eggs; and though Mr. Farman says they are more pointed than other Falcons' eggs, out of twenty that we obtained, only five (from one nest) were at all elongated, the rest being of the size and shape of those of the Peregrine Falcon, but, as a rule, not so brightly coloured.

In Macedonia we observed the Saker several times, but, owing to the extraordinary way in which they carry off shot, we were unsuccessful in obtaining any, though we afterwards found no difficulty in shooting them from the nest.

M. Alléon informs us that the Saker breeds in holes in some of the ancient Roman aqueducts which pass through the Forest of Belgrade; but none were there when one of us visited them with him, and the choice of such a situation is certainly quite different from the usual habit of the species.

23. *FALCO LANARIUS*, L. Lanner Falcon.

I cannot be quite positive as to the occurrence of the Lanner in Macedonia, as we could not obtain a specimen; but we shot several times at Falcons which, we believe, were of this species. We were equally unsuccessful in Bulgaria, though we found two or three pairs of Falcons, which no doubt were Lanners, about the same rocks where Mr. Farman had previously found them.

One nest of four eggs was got in a range of rocks above the Schumla-road station; and the birds, which we saw distinctly, screamed in a manner quite different from the Peregrine Falcon, and were certainly not Sakers.

24. *FALCO PEREGRINUS*, L. Peregrine Falcon.

Not observed in Bulgaria, but is tolerably common in Macedonia during the winter. We shot one immense female which was sitting on a tree in a marsh gorged with food; but we never observed it except in the neighbourhood of water; and we may remark that in Scotland the Falcon's nest almost invariably overhangs either the sea or an inland loch.

25. *HYPOTRIORCHIS ÆSALON*, L. Merlin.

Common during winter in Greece and Macedonia, but can hardly breed in the country, as we never saw it after March.

26. *HYPOTRIORCHIS SUBBUTEO* (L.). Hobby.

A very common summer visitor to Turkey, where it arrives

about the second week of April, and frequents the groves of trees which are found here and there in the open country.

27. *ERYTHROPUS VESPERTINUS* (L.). Orange-legged Hobby.

First noticed on the 25th April, when they appeared in considerable numbers near Sindal, in Bulgaria, and frequented ploughed fields, where they hawked about for flies and insects. We cannot say whether they breed in this part of the country; but Mr. Farman does not mention the fact in his list.

28. *TINNUNCULUS ALAUDARIUS*, G. R. Gray. Kestrel.

Extremely common at every place we visited, both in winter and spring.

29. *TINNUNCULUS CENCHRIS* (Frisch). Lesser Kestrel.

We never observed this species but once, when snowed up in a Bulgarian village near Salonica on March 6th. Early in the morning a Lesser Kestrel, which had probably just arrived, flew against the house and was killed. We do not think it is found commonly, except in the most southern part of the country.

30. *ASTUR PALUMBARIUS* (L.). Gos-Hawk.

Not rare in any part of the country, and remains during the whole year. A nest was seen in the Forest of Belgrade; and another was found near Gubedjic on the day the eggs of *Buteo desertorum* were taken. This last was in an oak-forest near the sea; but there is reason to believe that the Gos-Hawk is more plentiful in the pine-forests of the Balkans.

31. *ACCIPITER NISUS* (L.). Sparrow-Hawk.

A common bird in most parts of the country, and much more familiar in its habits than in England.

32. *ACCIPITER BREVIPES* (Severzow). Short-toed Sparrow-Hawk.

We have no doubt that this Sparrow-Hawk, and probably another species which we are not yet able to identify, are not uncommon in the east of Turkey; and the present species has been killed, both by Mr. Robson and M. Alléon (Rev. Zool. 1867, p. 3), near Constantinople. In Mr. Robson's collection are two small Hawks which certainly appeared to belong to another species—possibly *Accipiter gagar*, but we cannot be sure of this.

33. *CIRCUS ÆRUGINOSUS* (L.). Marsh-Harrier.

Extremely numerous in every part of the country where marshy ground is to be found, more so than any other bird of prey. The great variety of plumage in this species is at first very puzzling, some of the very old males having the wings and tail of a bluish cream-colour, and in some cases nearly white; Mr. Robson has a specimen whose entire plumage is of a deep brown, almost black.

34. *CIRCUS CYANEUS* (L.). Hen-Harrier.

Tolerably common, but not so much so as the Pale Harrier, which in a great measure replaces it.

35. *CIRCUS SWAINSONI* (A. Smith). Pale Harrier.

Most numerous in the Dobrudscha, where it is so common that a basketful of eggs may be gathered in a day in some of its breeding-places. On the wing it is almost impossible to distinguish this species from the preceding one; and the females are almost exactly similar.

36. *CIRCUS CINERACEUS* (Mont.). Montagu's Harrier.

Not so common as the last, but found in the Dobrudscha and near Constantinople, where Mr. Robson has procured specimens.

37. *ATHENE NOCTUA* (Retzius). Little Owl.

The commonest Owl in the country; nearly all the churches, old houses, and ruins being tenanted by a pair. In the afternoon they come out, making a curious squeaking noise, and, when disturbed, go off with a slow undulating flight, like that of a Woodpecker.

38. *SCOPS GIU* (Scopoli). Scops Eared Owl.

Not uncommon near Constantinople, where it breeds, but never observed by us in other parts of the country.

39. *BUBO MAXIMUS*, Ranzani. Eagle-Owl.

A common species all over Turkey, especially in the woods of Macedonia and on the treeless downs of the Dobrudscha, which it seems to find as well suited to its habits as more sheltered localities. In this part of the country it chooses a bank of earth on the side of a ravine for its eyry, and scratches out a hole for the eggs in the bare ground, sometimes within sight of every passer

by. We found a nest of four hard-set eggs on April 8th, and others containing young birds a fortnight later.

40. *ASIO OTUS* (L.). Long-eared Owl.

We shot one specimen on the mountains of Macedonia, and afterwards found the species breeding on a low island in the Danube, covered with a dense thicket of willows. The young were three parts grown on the 1st of May; so that nidification must have been begun before the ice broke up on the river.

41. *ASIO BRACHYOTUS* (L.). Short-eared Owl.

Breeds commonly in the Dobrudscha, where we obtained one or two nests, but did not find it anywhere else.

42. *SYRNIUM ALUCO* (L.). Tawny Owl.

This cannot be a common species, as we never saw or heard it; but Mr. Robson has obtained it more than once. In his collection was a perfectly black Owl which no doubt was a melanite variety of this species.

43. *STRIX FLAMMEA*, L. Barn-Owl.

Not observed by us, but included in Lord Lilford's list.

44. *NYCTEA TENGMALMI* (Gmel.). Tengmalm's Owl.

Said to have once occurred at Corfu (Ibis, 1860, p. 133).

[To be continued.]

V.—*On the Ornithology of Hainan.*

By ROBERT SWINHOE, F.Z.S. &c.

(Plate IV.)

AFTER my successful researches in the island of Formosa*, I was determined, should an opportunity offer itself, to pay a visit to the island of Hainan. The opportunity came in the spring of 1868, when Her Majesty's Minister at Peking, being desirous to obtain information on the commercial capabilities of that island, with a view to opening a port in it for European trade, gave me instructions to repair thither in a gunboat to prosecute inquiries, the whole cruise not to extend over two

* Cf. Ibis, 1860, pp. 186, 187, 359-361; 1863, pp. 198-219, 250-311, 377-435; 1864, pp. 361-370, 425-429.

months and a half. Apart from the investigations on behalf of the Government, I gained the Minister's permission to devote my leisure time during the trip to the study of the natural productions of the new country. Admiral Keppel detached the gunboat 'Algerine,' Lieutenant and Commander Domville, for the duty; and Captain Holroyd, of H.M.'s 73rd regiment, accompanying us as the guest of the Commander, made a third to our party. In all our pleasure-trips on shore, Commander Domville and Captain Holroyd always carried guns, and thus aided me considerably in procuring specimens of birds; and to them I owe my best thanks in the cause of science. The Admiral insisted upon our associating the pursuit of pirates with our more peaceful occupation of hunting for information; and this, though sometimes producing serious drawbacks to getting quiet conversation with the natives, yet afforded a diversion to the monotony of a sea voyage.

From any tolerable map of China my readers may learn where Hainan is situated, if they turn their eyes westward from Hongkong along the coast of the province of Kwangtung to where a peninsula runs southwards, dividing the China Sea from the Gulf of Tonquin. This is the peninsula of Luichow; and directly south of this, across a strait fifteen miles in width, stretches the large island of Hainan, covering two degrees of latitude ($20^{\circ} 8'$ to $17^{\circ} 52' N$), and over two and a half degrees of longitude ($108^{\circ} 32'$ to $111^{\circ} 15' E$). The island is of a somewhat oval shape, extends from north-east to south-west (its greatest length) about 160 miles, and has an average breadth of nearly 90 miles. Its area is about 1200 square miles, rather larger than the island of Formosa, and about two-thirds the size of Sicily. About a third of its north-eastern portion, together with broad tracts on its north-western and south-western sides, are flat, or gently undulating, with only a few eminences, the soil being composed of marine deposit, and poor in quality. The rest of the country consists of jungle-covered mountains, with rich valleys between them. The north-easterly portion is exposed to the influence of the winter monsoon, and enjoys cool weather during the China cold season, while the mountains of the interior, rising to an altitude of 7000 feet, debar the south

from the refreshing north-easters, and render it entirely tropical, and, according to the Chinese, very pestilential. In Hainan the visitor from China is specially struck with the abundance of the cocoanut tree (a tree not found in the latitude of Canton), which meets the eye on all points of the island coast. In spite of the winter monsoon, it flourishes best in the north-east corner of Hainan, in the district of Wênchang. Further in the interior, as the ground rises, the pine (*Pinus sinensis*) appears, and in some spots I noticed clumps of pine and topes of cocoanut growing side by side. We found the cocoanut also growing on the opposite shore of the Luichow peninsula, and on the small island of Naochow, off the right of the peninsula, in lat. $20^{\circ} 45'$. Higher than this we did not notice it. The mountainous interior of Hainan is inhabited by an independent race of people, who are called La, Lauy, or Le, according to dialectic difference of pronunciation in Chinese; and they are doubtless intimately connected with the Laos of Siam and Burmah and the Lolos of China.

We left Hongkong on the 29th January 1868, and anchored in the harbour of Hoeling island, in the Prefecture of Shao-king, at daylight on the 31st. The only birds I noticed here were *Passer montanus*, *Ixus sinensis*, *Turtur chinensis*, *Sterna melanauchen*, and a Kite.

Having engaged a pilot, we were away again next morning, and by the evening in the strait between Naochow island and Luichow peninsula, where the gunboat took the ground. This little accident gave us the whole of the following day for exploring Naochow. The land here is low and undulating, dotted with villages and farms in the midst of bamboos and banyans. The cocoanut tree is chiefly confined to the north-west corner of the island. The most notable bird we saw here was the Crane (*Grus cinerea*), which occurred in large flocks, and baffled all our attempts at close approach. The first bird I noticed and shot on landing was a race of the *Ixus sinensis*, with the whole crown black and no occipital white. We saw and procured several of these, but not one of the true Chinese bird. The next bird we secured was a veritable example of the European *Corvus corone*. There were two together, and we bagged

one of them. In Hainan, as will be seen further on, the ordinary big-billed black Crow, found from Canton to Peking—the *Corvus sinensis* of Gould—is the common species, and in the cities almost as familiar and domestic as the Sparrow. I am not aware that the European Corby has occurred in this part of the world before. The other birds we observed in our day's ramble were as follows :—*Gallinago scolopacina*, *Rhynchæa sinensis*, *Ardeola prasinoscelsis*, *Egretta alba*, *Passer montanus*, *Turtur chinensis*, *T. humilis*, *T. gelastes*, *Ruticilla aureora*, *Pratincola indica*, *Lanius schach*, *Copsychus saularis*, *Orthotomus phyllorhaphæus*, *Reguloides superciliosus*, *R. proregulus*, *Zosterops simplex*, *Emberiza personata*, *Anthus richardi*, *Motacilla luzonensis*, *Pica sericea*, *Corvus torquatus*, *Halcyon pileatus*, *Acridotheres cristatellus*, *Buteo japonicus*, *Tinnunculus alaudarius*, a species of *Eudynamis*, and only one Kite.

On the 3rd of February, at daylight, we weighed, and anchored in the afternoon in the open harbour of Hoihow, the port of the city of Kiungchow, the capital of Hainan. Through the kindness of Messrs. D. B. Robertson and F. W. Mayers, Her Majesty's Consul and Vice-Consul at Canton, I had been provided with letters from the Viceroy of Kwangtung, recommending me to the care and attention of the Governor, the Prefect, and the military commanders of Hainan. These officers received us well, and exerted themselves to assist us in the objects of our expedition. Commander Domville was "death on" pirates; and news having arrived that pirate junks had been seen hovering about the neighbourhood, the Captain of Hoihow hired junks and arranged a joint cruise with the gunboat in chase of them. This gave me a chance of having a quiet trip into the interior; and on the 6th of February I left the gunboat just as she was starting, and put up for the night at the house of a Canton merchant. On the 7th I rode to the city of Kiungchow, about two miles and a half distant from Hoihow, and took up my quarters in a public office provided for me by the Taotai or Governor. The next seven days I spent in official duties, in rambling about the city and its neighbourhood, and in paying a visit to a French Roman-Catholic priest, who lived in Chinese style and costume, in a small village about ten miles

distant from the city. On the 14th, having induced the Governor to send a military officer with me, I started on a trip to the mountains. We embarked close to the city in a flat-bottomed boat with our chairs and bearers, and pushed up the river to Kewchow, where we landed, and travelled across country to Shuy-wei-sze, a trading-station between spurs of the mountain chain. From Shuy-wei-sze we made for Tai-ping-sze, right among the mountains, in the district of Ting-gan. This was a wonderful place for forest-birds, abounding in lofty trees, clear of jungle and undergrowth. From this I pushed up to Ling-mun (or "Gate of the Mountains"), a place of barter between the Chinese and the independent tribes; but here most of the timber had been cut away, and I found it of less interest for natural-history purposes than the woody spots on a lower level. The Lieutenant commanding at Tai-ping-sze accompanied me to Ling-mun and back. He was most assiduous in his attentions, following me about in my rambles among the woods with hot tea, cakes, and pipe, and a stool to sit upon! As the weather was fearfully hot in this mountain-locked neighbourhood, the mandarin's attentions were thankfully received. The authorities at both Shuy-wei-sze and Tai-ping-sze had received orders from the Taotai to receive me well; and on my arrival at each place the police were drawn up in double line at the entrance to the town, supported by large crowds of the people, and, as I was carried through in my travelling chair to the temple appointed for my reception, the police fell on one knee, a salute of three guns was fired, and the mandarins, in their ornamented official robes, presented themselves to welcome me in a travel-stained shooting turn-out with a gun on my shoulder. Their first idea of a British official must have been a strange one; but when I explained to them that I was as much interested in the wild animals of the island as in any other of its products, they did their best to aid me, though they never ceased to regard me as a queer customer, and could not to the last understand why I should trouble myself about birds and beasts, and to what use I could turn their skins. I am afraid they looked upon me as slightly wrong in the head. Nevertheless they did not cease their attentions, and gave me what information I sought. The

Lieutenant of Shuy-wei-sze did not leave me till he had handed me over to the authorities at Tai-ping-sze; and the fat good-natured Lieutenant of this last place clung to me till I returned to Kiungchow-foo in safety. On my return from the hills, I passed over a bleak plain to the city of Ting-gan. It was blowing cold from the north-east, drizzling with rain, and I was carried into the city in a benumbed state, so great was the change from the heat among the mountains during the previous few days. The chief authority or magistrate at the city of Ting-gan received me into his own house, and I spent a very pleasant evening with him and his secretary and literary friends. Next morning he provided me with a boat, and I returned to the capital, arriving there on the 1st March, my cruise in the interior having occupied a fortnight.

The gunboat was at anchor in Hoihow harbour; and we got away on the 4th March, and anchored outside the Poochin river the same evening. On the 6th we entered the Chinlan river on the west, in the Wênchang district, where we explored till the 8th. We then left and sailed down the coast. On the 9th, near the shore opposite Tychow island, the gunboat captured and burned a pirate junk, whose crew fired and threw overboard her guns and escaped to land. On the 10th we anchored off Lingshuy harbour, and spent a pleasant time in its neighbourhood till the afternoon of the 12th. We were informed that pirates were in watch for junks outside the harbour, and, creeping out, we sighted two of their vessels and gave chase. The pirates now tried to escape in a boat, but they were all, thirty-three in number, taken prisoners. The gunboat anchored with her captives in Yu-lin-kan bay. The shore here is mountainous, jungly, and inhabited by Le men, and the heat was great. We rambled about in this neighbourhood till the 14th, when we left at noon, and anchored at 4 P.M. under West Island. We had a morning stroll the next day over this pretty little island, colonized by Chinese fishermen, and lying about three miles from the wild-looking land opposite. The flat portion of the island was grassy in places, and in places planted with cotton, and protected from the winds by hedges of plants and trees. The hilly portion was covered with wood.

The birds observed here were *Alauda cœlivox*, *Anthus cervinus*, *Pipastes agilis*, *Heterornis sinensis*, *Centropus affinis*, *Turtur chinensis*, besides a new *Ixus* and a new *Arachnecthra*. On the pebbles of the beach we procured a solitary Grey-headed Wag-tail, *Budytes cinereocapillus*. I further noticed an Osprey, a Sea-Eagle, a Kestrel, and a Marsh-Harrier. The gunboat moved at noon, and at 4 P.M. anchored in the outer harbour of Nychow, and next morning the pirates were handed over to the authorities. We spent from the 15th to the 19th March in this glorious tropical region, visiting, feasting, and exploring, and on the 20th began again to steer northwards, passing along the west coast of Hainan. The 21st we spent at Tuntow, on the borders of the Kangên and Changhwa districts, part of the 22nd and the 23rd at Hoitow in Tanchow district, the 25th to 27th at Heongpoo, also in the Tanchow district, losing two days here on account of rainy and stormy weather. March 29th we explored at Haosuy in the Linkao district, and March 30th about Hungpe harbour, in the district of Chingmai. On the 31st, we were back again at Hoihow, whence, after exchanging civilities with the authorities, and finishing the details of our inquiries, we steered across, on the morning of the 3rd of April, to the mainland opposite—the peninsula of Luichow, and had a run on shore. The land beyond the beach is somewhat raised, and hedges and trees shelter the rice-fields behind. Here, to my astonishment, I found *Ixus sinensis*, the common Bulbul; but among them occasionally occurred the black-capped species of Hainan and Naochow. I also noted *Gallinula phœnicura*, *Prinia sonitans*, and *Phylloscopus fuscatus*. Along the beach southwards I shot a *Lobipes hyperboreus* as he sat floating about in a pool. Along the banks of a small creek that enters from the sea, we saw large numbers of *Totanus glottis* and *Hiaticula cantiana*, and a flight of Wagtails (*Motacilla ocularis*) settling for the night among the sands. The dirty weather compelled us to anchor again under Naochow island on the 5th of April, and, in spite of the wind and drizzle, I got a long stroll with my gun. We had already met the summer birds passing up the western coast of Hainan; but Naochow was full of migrants. I shot a female *Erythrosterna mugimaki* (T. & S.),

two females of *Pericrocotus cantonensis*, and a male *P. cinereus*, also a pair of *Xanthopygia narcissina*, and a male *Caprimulgus jotaka*. I further saw several times *Cyanoptila cyanomelana*. I got also a specimen of the Tailor-bird (*Orthotomus*), which is not uncommon in Naochow island, though I sought for it in vain in Hainan. Neither does it occur in Formosa, though common enough on the Chinese coast opposite. On the 6th we made the best of our way to Hongkong, touching at Macao.

With this sketch of my cruise, I will now proceed to give a list of the birds procured and noted, with descriptions of the novelties, and such details on their habits and habitats as my short time of observation admitted of my gathering.

1. *FALCO PEREGRINUS*, Gmel.

On the 18th of February, on my way from the interior to 'Tinggan city, I saw what I believe was this Falcon on several occasions. It sat on the tops of grave-mounds. It was cold, and drizzling with rain, and I did not succeed in getting a shot at one.

2. *TINNUNCULUS ALAUDARIUS*, G. R. Gray.

Observed often and in all parts of Hainan. I procured specimens both there and in the small island of Naochow, which do not appear to differ from European examples.

3. *ACCIPITER NISUS* (Linn.).

I met only one of this species; and that was on the 20th of February, at Tai-ping-sze (Central Hainan).

4. *MICRONISUS BADIUS* (Gmel.).

On the 19th of February, at Shuy-wei-sze (Central Hainan), whilst strolling about outside a wood, I saw a small Sparrow-Hawk seated quietly on the bough of a large tree. I wounded it, and, after a long chase, managed to secure it. I did not meet with the bird again. My prize was a fine adult male, and turns out to be this species. Mr. J. H. Gurney pronounced it to be so; and I have since compared it (kindly assisted by Mr. G. R. Gray) with specimens in the British Museum. This Sparrow-Hawk has not hitherto occurred within our Chinese limits.

5. *SPILORNIS RUTHERFORDI*, sp. n.

On the 19th of February, as we were journeying from Shuy-wei-sze (Central Hainan), my party made a halt at a wayside house adjoining a wood. I got out of my chair and wandered among the trees. I had not gone far when out bustled an Eagle from close over my head. I brought him down, and found that I had shot an immature *Spilornis*. The country from this place to Tai-ping-sze was one succession of fine timber-woods, consisting chiefly of large liquidambar-trees, or of various species of figs. Cultivated land occurred in patches between. I had got into the home of the Spotted Snake-Eagle. The next day I saw two or three of them soaring in circles high up in the air, and uttering a squeal-like scream. Such a falsetto note from so big a bird did not seem possible. The circles they described were not of great diameter. Presently one made a sudden stoop, and alighted on the top bough of a high tree. It showed no signs of alarm as I walked deliberately under the tree and shot it. I picked up an adult bird so much smaller than the birds I had obtained before at Formosa and Amoy, that I made sure that I had got *S. bido*. I shot two more adults that day with equal ease; and at the same place, on my way back, I got a fourth adult. I did not observe the bird in any other part of Hainan. Out of the stomachs of those I procured were taken bits of snakes and grasshoppers. Their irides were bright yellow, their cere and orbits deep yellow, and their legs and toes dingy ochreous-yellow, with black claws.

Mr. J. H. Gurney, on seeing a Hainan bird, said at once that it was distinct from *S. bido*, from its showing fine bars on the breast and under parts, which the Malayan species never has. He believed he had the same species from Siam, collected by the late M. Mouhot at a place in that country called Pachebouri. He sent to Norwich for the Siamese specimen and some others; and we compared them with my series of the Hainan race, and with others in my collection from Formosa, Amoy, the Himalayas, and Java. We made out the following measurements:—

Locality.	Tarsus.	Middle-toe, without claw.	Wing.	Species.
Himalaya	4.5	2.5	20.5	<i>Spilornis cheela</i> ♀
Amoy	4	2.5	20	" " ♂
"	4.5	2.3	20.5	" " ♀
Formosa (Feb. 1866)	4	2.25	18	" " ♂
" (Jan. 1866)	4.5	2.5	19.5	" " ♀
" (immature)	4	2.5	18.7	" "
Siam	3.5	2	17.75	New species.
Hainan. No. 1	3.75	1.9	16.25	" "
" No. 2	3.75	2.3	17	" "
" No. 3	4	2.3	16.7	" "
" No. 4	4.25	2.1	16.5	" "
" No. 5 (immature)	3.75	2	16.25	" "
Penang	3.3	1.75	15	<i>Spilornis bido</i> .
Java	3.25	2	15	" "
E. Java	3.75	2	16	" "
India	3.5	1.8	15.25	" "

The present new species may be distinguished at once from *S. cheela* by its smaller size and much less robust tarsi. In colour, its variable plumage seems to follow that of the Indian species. I have not succeeded in fixing on any constant characters in this respect by which to distinguish them. With *S. bido* (Horsf.) it agrees better in size, but is easily separable by its lighter under parts being more or less distinctly barred with fine zigzag lines of brown.

I have named this species in honour of His Excellency Sir Rutherford Alcock, K.C.B., Her Majesty's Minister at Peking, through whose kind influence I was selected for the exploring expedition to Hainan.

6. PANDION HALIÆTUS (Linn.).

The Osprey was seen in many of the Hainan harbours. On the 15th of February, while being poled up the main river between Kiungchow and Ting-gan, the boatmen roused me from a doze and pointed to an Osprey hovering a long way over head. I tried a cartridge at him and brought him down. He was a male, in search for his afternoon meal.

7. ? BLAGRUS LEUCOGASTER (Gmel.).

In the Lingshuy lagoon (S.E. Hainan), while shooting Swifts, a large Sea-Eagle flew over. I was on the point of

trying my luck at him when one of my comrades on the other side of the bank first snapped a cap, and then fired an unsuccessful shot at him. The bird increased the speed of his flight, shaking himself as he went along, and we thus lost the noble fellow. I saw another on the 15th of March taking long sweeping flights round a rock off West Island (S. Hainan), but there was no getting at him. It was a light-coloured bird, and more like the *B. leucogaster* than any other Sea-Eagle I know.

8. BUTEO JAPONICUS, T. & S.

I first fell in with this bird on the island of Naochow. He was resting at noon, after a meal off *Passer montanus*, in one of the bushy trees of a small grove. My appearance disturbed him, and he flew across heavily, when I secured him. The irides were yellowish-brown, just tinged with green, the cere and legs orange-yellow. This was on the 2nd of February, and the Buzzard was probably there, as at Amoy and Hongkong, a winter visitant. I afterwards saw the species on the 11th of March at Lingsuy (S.E. Hainan) and on the 25th of March at Heongpoo (W. Hainan).

9. ? POLIORNIS POLIOGENYS (T. & S.).

At Lingmun (Central Hainan) I saw a small Buzzard-like bird, which escaped wounded over a hedge. I took it to be this species, but, as I cannot be sure, I mark it with a query. The *Poliornis* is also a migrant on the China coast, and may possibly pay winter-visits to Hainan.

10. CIRCUS SPILONOTUS, Kaup.

There were several of this Harrier squatting about a large grassy plain, on the 15th of February, near the city of Ting-gan. I could not get near enough to them to have a shot. I observed it also over the paddy-fields near the capital.

11. CIRCUS ÆRUGINOSUS (Linn.).

I saw the Marsh-Harrier about the fenny shores of Hoihow harbour (N. Hainan); and up the river, near Ting-gan city, on the 15th of February, I winged a female with the help of a cartridge.

12. *CIRCUS CYANEUS* (Linn.).

Seen on the plain at Lingsuy, between the lagoon and the city.

13. *MILVUS GOVINDA*, Sykes.

There was something in the manner and appearance of the Kite, which was abundant everywhere in Hainan, that struck me as different from the China species. I took the following note from a fresh-shot male :—" *Iris bright chestnut. Cere yellow; gape bluish-white. Bill brownish-black towards tip; inside of mouth bluish. Feet pale bluish-grey, lightly tinged with yellow; claws ink-black. Length nearly 24 inches; wing 17·8; tail 12 inches. From tip of wing to tip of tail 1 inch.*"

The Chinese bird has the iris *hazel-ochre*, and has but the slightest touch of yellow on the cere (*cf.* Ibis, 1867, p. 410). Dr. Jerdon unfortunately does not give the colour of the iris and cere in *M. govinda* of India. The Hainan Kite may be identical with the Indian bird, while the Chinese race seems to hold a place intermediate between *M. govinda* and *M. melanotis* of Japan, the specimens from Peking being larger and more affine to the latter.

14. *EPHIALTES LETTIA* (Hodgs.).

While shooting Squirrels among a clump of trees and bushes on a slope under the north wall of the capital, just before dusk, at the report of my gun out bounced a small Owl, and perched on a partly exposed bough, raising his horns to the utmost, and uttering a harsh cat-like cry, of a nature likely to alarm one at night. On shooting it, I found it to be one of the *lempiji* group of Owls with dark iris. I met no more of the species.

"♂. Bill pale yellowish horn-colour. Iris deep brown. Feet light greyish-brown. No white about the face as in *E. semitorques* (T. & S.) of Japan and China.

"Length 9·25; wing 6·2; tail 3·4; tip of wing to tip of tail ·6."

I took the above note from the fresh bird. It answers best to the *E. lettia* of Hodgson, with which Messrs. Wallace and Blyth have identified my specimen.

15. *NINOX JAPONICUS* (T. & S.).

This is the only other Owl we came across in Hainan. On the 29th March, at Haosuy (N.W. Hainan), we disturbed a pair

in a grove by the side of a village, and, after much chasing, bagged them both. On the 2nd April I roused another in some market gardens not far from the capital. The birds procured are of the Chinese race, and, I should say, were on their migration up the China coast. They had the unsettled movements of fresh arrivals, and were associated with many little wanderers that, like this species, find a summer home in more northerly latitudes.

16. *CAPRIMULGUS JOTAKA*, Temm. & Schleg.

On the 19th March, on the wild jungly shore of Nychow harbour, I observed several Goatsuckers perching about the sands. It was too dark to aim straight, and I did not succeed in securing a specimen; I was therefore unable to determine to what species they belonged. Later, however, on our homeward voyage, I came across the Japanese bird. It was on the 15th April, on the island of Naochow. The specimen shot was a male, which I disturbed just before dark from among some bushes. He was evidently a migrant bound up the China coast, and took to the banyan trees, perching lengthwise on the thick branches. In a small collection of birds made, by Dr. Anderson of the Calcutta Museum, on the western borders of the province of Yunnan, from the Burmese side, which Mr. Blandford lately showed me, was a specimen of this Nightjar. I suspect that it is to the eastern foot of the mountain ranges that divide Burmah and the Laos country from China that most of our summer birds retire during winter.

17. *CYPSELUS PACIFICUS*, Lath.

"*C. vittatus*, Jard. & Selb.," of my former lists.

On the occasion mentioned above, in Nychow harbour, I noticed a large gathering of this Swift flying overhead, and screeching before dropping to roost among the rocks. I secured a specimen.

18. *CYPSELUS SUBFURCATUS*, Blyth, J. A. S. B. xviii. p. 807.

In the flock of the species mentioned previously I recognized several of these. I also saw some at Kiung-chow city on the 1st of March, during a storm.

19. *CYPSELUS TINUS*, sp. n.

Above deep sepia-brown, with a slight deep green iridescence, rump lighter, beneath much brighter. Wing and tail brownish-black, the former with pale inner edges. Between the bill and eye a whitish spot. Bill and legs blackish-brown, with a pink tinge. Iris deep hazel.

Length about 4.5; wing 4.75; first quill attenuating to the tip, and .25 in. shorter than the second; tail 2.25, middle rectrices .875 shorter than the laterals.

The female is a trifle shorter in the wing, but is otherwise similar to the male.

This species is of the same typical form as *C. batassiensis*, Gray, of India and Burmah, but is smaller, more deeply coloured, with a shorter and narrower bill, longer wings, and less forked tail. It appears to be a good second species of the Palm-Swift type, which connects *Cypselus* with *Collocalia*.

I first noticed this little species at Tai-ping-sze (Central Hainan), where a single pair passed over my head, and I shot one. Among the cocoanut-trees, on the sand-banks of the Lingshuy lagoon (S.E. Hainan), they were common enough, and we procured several. It was the 10th of March, but there did not appear any signs of nidification. On the 18th of March at Nychow (S. Hainan) I again saw numbers of them flying backwards and forwards over a wood near the city.

20. ? *ACANTHYLIS CAUDACUTA* (Lath.).

A Chinese work on the island of Hainan, in its list of birds, mentions a large species of Swallow, "as big as a Dove"*; which

* "There are two kinds of Swallows in Hainan—the 'Yuë' [*Hirundo gutturalis*] and the 'Hoo' [*H. daurica*]. There is also a Sea-Swallow as big as a Dove, that comes each spring to nestle in the rocky cliffs, dangerous precipices with piles of spinous grasses. The natives wait till the birds' autumnal departure, and then, by means of a shovel at the end of a long pole, collect the nests for sale. They are termed 'Sea-Swallows' nests,' and are now also procured from the overhanging cliffs and inaccessible crevices of the islands of Nychow and Wanchow. They are more excellent than the 'Birds' nests' bought from foreign vessels; but, as the year's produce only consists of a few pounds, they are extremely difficult to obtain."—*Kiung-shan-Ileen Che* (An Account, Historical and Statistical, of the Kiungshan District of Hainan.)

makes its nest in the caves of certain small islands off the southerly coast of Hainan. It adds that, in autumn, when the birds desert their nests, the nests are collected and sold for food, and that epicures esteem them much more highly than those imported from the Straits of Malacca. The builders of such nests must surely be this large Spine-tailed Swift. We passed close to some of these islands, but looked in vain for the birds. They had not yet returned to their breeding-places. None of the nests were to be purchased in the various markets we visited in Hainan towns; but out of a pirate the gunboat captured, off Lingshuy, we took a parcel of rather large gelatinous nests, which possibly were collected from the neighbouring island rocks; but we could procure no satisfactory evidence to show that they were. I therefore was forced, with much reluctance, to abandon the determination of this interesting question to the next adventurer who has the good fortune to go over my ground.

21. ? *MEROPS PHILIPPENSIS*, Linn.

A friend of mine, who visited the Chunlan river in the Wen-chang district (N.E. Hainan) later in the season, on a former pirate-hunting expedition, tells me that he observed a large party of green-coloured birds, which he took to belong to a species of Parrot (!), going in and out of holes in the sand-banks of this river. The Philippine Bee-eater is the only species of this genus that has been observed in China, one specimen having been obtained out of a small number some years ago at Swatow; and I refer the Hainan bird, therefore, with a query, to this species. I did not meet with the bird myself.

22. *UPUPA CEYLONENSIS*, Reichenb. *U. nigripennis*, Gould.

In Hainan we saw not our European friend *U. epops*, which occurs in tolerable abundance, from Canton to Peking, on the China coast; but here the richer-coloured "Bird of the Le matrons," as the Chinese of the island name it—the *U. ceylonensis* of Southern India and Burmah—took its place. I found it common everywhere, as common about the orchards and gardens beneath the walls of Kiungchow as in the forests of the interior or the tangled jungles of the south. It is a tame, in-offensive bird, and as much a favourite with the Hainan

Chinese as the allied *U. epops* is an object of dislike to their Amoy brethren. When disturbed while feeding on the ground, it flies up to the nearest tree, and expands its crest, bowing each time. Its note is similar to that of the northern species, but, I think, distinguishable, being hoarser and not so sharp.

I made the following note on some specimens shot at Kiungchow:—"♂. Length 11·25; wing 5·3; tail 4·125; wing-tip to end of tail 2·25. Bill from forehead 2·4. Tertials ·25 shorter than wing-tip. Iris very deep brown. Bill deep brown for more than two-thirds of its length, pale brownish white tinged with ochre at its base. Legs greyish-brown. The female has a shorter bill than the male, and is smaller. Two females measure:—Bill 1·9 and 2·1; wing 5 and 5·25; tail 3·5 and 3·875." The proportions vary in both sexes, and the bills vary also in curvature. Four of my specimens have no white spots on the first primary; but one male has it as distinct as in *U. epops*. Hence the lack of the white wing-spot cannot be regarded as a constant distinguishing character. The absence of white at the base of the black crest-tips is a far better mark for instant discrimination. The white tail-band is very variable in breadth; and so, indeed, are all the markings. The tibial feathers are of the colour of the breast, and not whitish as in *U. epops*.

Mr. G. R. Gray was so kind as to allow me to examine the specimens of Indian Hoopoes in the British Museum. One of the skins there was a red bird like ours, with similar crest, but with the white wing-spot like my single specimen mentioned above. Another was like *U. epops* in the crest and other respects, but had no white wing-spot. This satisfactorily proves that the absence or presence of the wing-spot is no constant character in either *U. ceylonensis* or *U. epops*.

I observed no Hoopoe in the island of Naochow.

23. *ALCEDO BENGALENSIS*, Gmel.

Common in all the open country wherever water occurred.

24. *CERYLE RUDIS* (Linn.).

Seen about all the rivers and lagoons throughout Hainan.

25. HALCYON SMYRNENSIS (Linn.).

The only bird I saw of this species was at Haosuy (N.W. Hainan), in a grove adjoining a village.

26. HALCYON PILEATUS (Bodd.) ; *Alcedo atricapilla*, Gmel.

Only observed in Hainan, at the same place as the last-named. I saw three in the small island of Naochow, and procured one.

27. PALÆORNIS JAVANICA (Osbeck).

I fully expected that the "Sugar-cane-bird" of the Hainanese, the only Parrot in Hainan, would turn out to be a new species. But no, my specimens are identical with examples sent from India by Mr. Blyth. I have four fine adult birds from Hainan:—

	Length of wing.	of tail.
♂ (A.)	6.6	7
♂ (B.)	6.5	8.25
♂ (C.)	6.5	7.25
♀	6.5	7

"A" is of a deeper red on the breast than the other two males, which have a plum-coloured bloom over that part, with verditer-blue tips to the green feathers that succeed. In "B" and "C" there is more blue in the colour of the head, and on the two middle tail-feathers. In both sexes the lower mandible is black, in the female the upper as well. The red of the belly in the female skin extends less downwards, and has a chestnut wash. In the skin of another female, which I kept alive for some time, the colour of that part is light purplish, tinged with bluish-grey. In both the French-grey of the crown is of a livelier hue of blue, with less tint of purple than in the males. In my male specimen "A," which I take to be the oldest, the quills are much yellower than in the others. My two Indian birds show much more uniformity in coloration, and their pectoral red extends much lower down on to the belly. In the Hainan specimens, the variation seems to be individual, and I do not think it due to age.

Dr. Jerdon (B. Ind. i. p. 263) gives the wing of this species as 7 inches in length, and the tail 10, adding that the female acquires a red bill when fully adult. The Chinese in Hainan, who are fond of keeping this Parrakeet and teaching it to

speak, regard the black-billed and the red-billed birds as distinct. On several occasions I saw them in shops in the towns, either perched on their triangular frame-cages, to which they were chained, or walking about freely over the counter. The iris of the bird is white, its legs whitish-grey.

I cannot say that this species is common in Hainan; for I sought for it without success, and did not even see it until I got to Tai-ping-sze. Here, on my halt when journeying inwards, I noticed a small party flying at a height overhead. On my rest at the same place coming back, I suddenly came on a tolerably large number of them feeding on the wild berries of a hedge. I fired and secured two red-bills and a black-bill, which, on dissection, turned out to be males and female as I had expected. The rest were off so quick on the other side of the hedge that I did not see them again. On shore, at Haosuy harbour (N.W. Hainan), I saw the only other example of this bird. It was a male, and made such a noise talking to himself that he attracted my attention. He was sitting all alone on the bough of a tree near a village.

28. PICUS MANDARINUS, Gould.

This Woodpecker only occurred to us on the jingly shore of Yulinkan Bay (S. Hainan), which, though offering the finest harbour in the island, is entirely deserted by the Chinese. A few Le aborigines were met on shore, who brought water and cut wood for us, in exchange for some old clothes taken out of the pirate junks. The jungle on the hills, right to the beach, was, in many places, impenetrable without a knife; and many a good bird I lost from the impossibility of getting to it. Every savage here carries a large knife, in a pitcher-shaped basket fastened to the back of his waist, and with the knife he clears his way through the strong rattan and other tangles that cross the woods at every height. For a supply of cigars I induced a savage to guide me about on a ramble, but, curiously enough, he took little interest in the shooting, and was no hand at retrieving. I had at last to give him up in despair. In a plantation enclosed by a wooden stockade to keep out wild beasts, I met the Commander of the gunboat. He had knocked down a

Woodpecker, which was lying on its back screaming, and showing fight with beak and claws. It was a female, with the iris white as usual. Length of wing 5 inches, of tail 3.2. On comparing the skin with my series from China, I find no marks which I can deem constant whereby to distinguish it. It has narrower black tail-bands than a bird from Canton, and in this respect approaches a Peking bird. It has a shorter wing than the Canton and Peking birds, which agree in this particular. But a Foochow bird here steps in with longer wings than the Canton and Peking specimens, and with tail-bands intermediate in breadth, while another Foochow bird has the bands fully as broad as in the Canton bird. The white spots on the wing are also variable. Our Hainan bird is apparently fully adult; for its under parts are of a clear cream-colour, and the crimson spot on the breast is very well defined.

29. *PICUS KALEENSIS*, Swinhoe, Ibis, 1863, p. 390.

The first bird that greeted me on my first ramble, on a damp morning, at Shuy-wei-sze (Central Hainan) was a little Spark-headed Woodpecker, perched on a high withered branch, uttering the same sharp note as its Formosa and Peking relatives. I met it frequently afterwards wherever timber-trees occurred, and procured four specimens. In size and general coloration my Hainan skins agree with Formosan; but the black streaks on the breast, in three of the four, are much narrower, though in the fourth they very nearly tally with those of the Formosan bird. The spots on the wing and bands on the tail vary in size in both races. The two races are more closely allied to each other than either is to the *P. scintilliceps* of Peking.

30. *MICROPTERNUS HOLROYDI*, sp. n.

A demon-like laugh startled me as I broke into a woody glade at Tai-ping-sze (Central Hainan), and turning round I spied that the author of this noise was a Bay Woodpecker clinging low down to the trunk of a tree. In those charming woods of fine old trees, between the mountain-spurs in the heart of the island, this Woodpecker was frequently heard and seen; but nearer the coast I did not fall in with it again. Its nearest ally is *M. fokiensis*, from Foochow (China), from which

it is distinguishable by its shorter wings and tail, and by the differences about the head, throat, and neck. The dark spots on the throat are wanting, or merely indicated by light yellowish-brown edging to the dull chestnut-brown feathers, while the elongated feathers of the head and hind neck are brown, with light yellowish-brown margins. The head and neck of *M. fokiensis* are lighter, with central black markings, deep chestnut-brown in the immature bird. I have five specimens of the Hainan race, which I have compared with five of *M. fokiensis* from Foochow and Tingchow; but so variable are the birds of this group, that I would scarcely attempt to separate them, were it not for the uniform shortness of the wings and tail in the Hainan bird. Both these races are readily separable from *M. brachyurus* (Vieill.), of Sumatra, *M. badius* (Horsf.), of Malacca, *M. badius* (Temm.), of Borneo, and *M. phaeiceps* (Blyth), from Pegu, of all of which I have authentic examples, received from Prof. Schlegel and Mr. Blyth; and, from Dr. Jerdon's description (B. Ind. i. p. 294), no comparison is needed of mine with his *M. gularis* of Malabar.

♂ Length of wing 4·4, of tail 2·75.

♀ " " 4·7, " 2·8.

Irides ochreous-white. Bill deep bluish-grey, with the greater part of the lower mandible, and edge of the upper, greenish-yellow. Legs and claws slate-colour, tinged with green.

I have named this species in honour of Captain Holroyd, of H.M.'s 73rd regiment, who accompanied us on the Hainan expedition, and gave me great assistance in collecting specimens.

31. MEGALÆMA FABER, sp. n. (Plate IV. fig. 1.)

Like Formosa, Hainan has also its peculiar species of Barbet; and from the almost identical colouring of the under parts, and the similarity of build and stature in the two birds, one must necessarily come to the conclusion that the one has been derived from the other, or that both are of common lineage. From its loud peculiar call, the Hainan species has earned among the natives of the island the appellation of "Ironsmith," whence I have derived its specific name*. Among the woods of the in-

* "The 'Ironsmith,' so called because its voice sounds like hammering the metal."—*Kiung-shan-Heen Che*.

terior I often saw this bird, either singly or in small parties. It is a stupid heavy species, keeping much to the upper boughs of umbrageous trees, especially those of the fig-group, of which there are a good many kinds in Hainan. It sits silent among the leaves munching the figs, and you may be under a tree a long time without knowing that a party of Barbets are overhead, except from the constant falling of berries. On staring up into the tree, it was often difficult to make them out, on account of their resemblance in colour to the foliage. When roused, they hop clumsily from twig to twig, sometimes giving utterance to a short faint note. In flying, they hold the head with the heavy bill well up, the body and tail inclining downwards, while the wings keep on a continued fluttering, and propel the bird in a straight direction.

Under parts as in *M. nuchalis*, Gould, of Formosa—that is, with a golden throat, a blue band below it, succeeded by a vermilion spot, with the rest fine grass-green—differing, however, in having purple intermingled in the blue band. On the crown it differs entirely from that species. Frontal feathers, to past the line of the eyes, with stiff shafts, black, faintly shaded with bluish-green; occipitals broadly tipped with deep crimson, a spot of the same colour occurring on each side of the bill in front of the eye. Ear-coverts cobalt-blue, tipped with yellowish-green. Under the eye to bill black. A little cobalt-blue fringes the red of the occiput. The rest of the plumage as in *M. nuchalis*, but without the dorsal red spot. Bill rather longer and larger than in that species. Irides deep reddish-brown. Legs leaden-grey, with a green tinge.

Length about 7·75; wing 4·3; tail 2·6, of ten slightly graduated feathers.

The accompanying plate (Plate IV.) represents (fig. 1) this new bird, as well as (fig. 2) the head of the allied species from Formosa.

[To be continued.]

VI.—Notes on the Birds of the Island of St. Helena.

By JOHN CHARLES MELLISS.

THE feathered portion of the St.-Helenian fauna can scarcely be said to be so interesting from a scientific point of view as

the rest, still it possesses one land- and at least eight sea-species which are indigenous; the first, the "Wire-bird" of the Islanders, doubtless so named because of the similarity between its legs and bits of thin wire*, was described by Temminck (Nouveau Recueil de Planches Coloriées d'Oiseaux, 1838) as *Charadrius pecuarius*, though he states that the specimen was obtained at the Cape of Good Hope; it is not improbable, however, that in reality it came from St. Helena. A later notice of this bird has been given by Mr. E. L. Layard in this Journal (Ibis, 1867, pp. 248-251). The sea-birds are the most interesting, inasmuch as they bear so great an analogy to those of the Polynesian Islands in the South Pacific ocean.

In the following list several cage-birds have been included, as being those most abundantly kept in the Island, and it being just possible that, like the Java Sparrow during the last few years, they may also breed upon it; there are many other West-African birds taken to the Island and kept as cage-birds in addition to those mentioned. Not included in this list is another land-bird, a small Finch, of the size of *Crithagra butyracea* or *Euplectes madagascariensis*, which during the last year or two has made its appearance in the Island, and been called the "Orange bird,"—there being nothing to show how or whence this bird came thither. It has its name from its breast being of the colour of a ripe orange. It is very scarce, and I have not yet been able to procure a specimen.

It is also said that two more species not included in this list exist in the Island, namely, a larger Ground-Dove, and a sea-bird called the "Black bird." I have not met with either of these, and although not quite sure that the latter may not be found identical with the Noddy, I am inclined to believe, from the description of it given by fishermen and others who have seen it, that it may turn out to be a black Tern different from the Noddy. Strange birds do occasionally visit the Island, but

* [Mr. Eden Baker (Zoologist, 2nd ser. p. 1475) says that the local name of this species "is taken from its haunt, the 'wire-grass,' a kind of couch-grass that grows where the fertile parts of the island gradually changes [*sic*] to the barrenness of the outer rocks."—ED.]

generally one at a time; last year only, a small black Swallow hovered about the rocky cliffs at Ladder Hill for several days, and a solitary Rail, not unlike the *Gallinula cristata* of Java, was caught at Lemon Valley. There are other instances as well of new species appearing for a short time. The opinion that such birds naturally and unaided migrate from other land should be received with much caution—the nearest mainland being 1200 miles distant, and, situated right in the heart of the South-east trade-winds, is nearly always to leeward of St. Helena; the Cape of Good Hope is nearly 2000 miles, and the South-American Continent just as far away; and the Island being situated directly in the track of homeward-bound, and not very far from that of outward-bound ships, birds may escape from either and find a resting-place here. The following extract from the local records of a period when there was much less traffic by sea would, however, tend to show that, notwithstanding its isolation, birds have migrated to the Island:—

“17th Oct. 1727. There being several birds of a different species from those that frequent the Island lately come hither, the bodies of which are as large as a Pheasant, their leggs long and black, but their claws opened and not webbed like sea-fowle, with long bills, resembling those of a Snipe, but thicker and longer in proportion to the bulk of their bodies, which probably may breed here if not destroyed or disturbed—

“Ordered, that all persons be publickly forbid by advertizement either to kill or disturb any of the said birds or destroy any of their eggs.”

There being no bird answering to this description now in the island, it may be presumed that in spite of the precaution these visitors did not remain at St. Helena. It is difficult also to account fully for the almost total disappearance of some species, such as the Frigate-bird, and possibly the entire disappearance of the Albatros, which latter does not now come so far north as St. Helena; but in Seale's ‘Geognosy of the Island of St. Helena’ it is stated that innumerable skeletons of it, associated with those of the Tropic-bird, lie buried from ten to ninety feet deep in earthy beds, near Hold-fast Tom and Sugar Loaf. I have not found any of these remains, though, in justice to Mr. Seale, I

must add that I have not been able to spend much time in searching for them.

In the list which follows, the indigenous birds are distinguished by their scientific names being printed in capital letters, and the local names are included within inverted commas. The notes on the species which have been introduced include the name of their chief *habitat*.

Estrela astrild (L.). “Aberdevat.” *Hab.* South Africa.

This is one of the most abundant field-birds in the Island, and may be seen in flights of a hundred or more at a time, especially in the neighbourhood of hay-fields as the grass-seed is ripening; it is by no means a timid bird, but behaves much like the common English Sparrow in frequenting the doors of country houses in order to pick up crumbs and the like. It builds its nest in high trees, generally preferring the Scotch fir and Botany-Bay willow (*Acacia longifolia*), and consequently suffers much by high winds blowing the nests down; the nest is spherical in form, about seven inches in diameter, with an almost closed tubular entrance on one side, and is generally built of grass and feathers, lined with cotton or wool.

These birds are caught in large numbers, and a small trade carried on in them between the natives and ships calling at the island; they are sold at three or four shillings a dozen, according to the demand for them.

Padda oryzivora (Linn.). “Java Sparrow.” *Hab.* Java.

A tolerably abundant bird, inhabiting the low rocky lands on the northern side of the Island, where they are frequently seen hopping about in pairs; but they are seen in flights in the interior when the corn is ripening. It is not many years since this bird was introduced. It appears to thrive well and to be increasing in numbers.

Vidua paradisica (Linn.). “Widow Bird.” *Hab.* West Africa.

Imported as a cage-bird from the west coast of Africa. It is said the species does not exist at Whydah.

Euplectes madagascariensis (Linn.). “Cardinal.” *Hab.* Madagascar, Mauritius.

A common field-bird in St. Helena, where it may be seen

associating with *Crithagra butyracea*, and in all probability breeds with it. It is not so plentiful, but may be seen occasionally in flights of a hundred or more when the corn is being reaped. It builds its nest, of roots generally, in the form of a little flat open basket, perched on the tops of the branches of the furze-bushes. It is often caught by the people and sold to passengers on board ship. It changes its plumage regularly from red to brown every year. This bird has a habit of frequenting those parts of the island where the common flag (*Antholyza aethiopica*) grows; it will sit perched on the long flower-stalk enjoying the honey, which it sucks through an aperture which it bites at the bottom of each long tubular flower.

Crithagra canaria (Linn.). True Canary. *Hab.* Canary Islands.

Bred in cages.

Crithagra butyracea (L.). "Canary." *Hab.* South Africa.

Next to the Aberdevat, the most abundant field-bird in the Island, and it is to be regretted that its numbers are diminishing, very probably owing to the trade carried on in them between the natives and shipping. The note of this bird is less shrill and much sweeter than that of the real Canary; perched on the branch of a tree, it will on a summer's morning sing unceasingly for hours. It associates with the Cardinal and Aberdevat, and is particularly fond of fruit, ripe peaches especially.

Gracula religiosa (Linn.). "Mynah." *Hab.* India.

This bird was introduced in the year 1829, and has not multiplied to any extent; but a few are still to be found inhabiting the Peepul trees (*Ficus terebrata*) in Jamestown.

Psittacula pullaria (Linn.). Love-bird. *Hab.* West Africa. As a cage-bird.

Psittacus erithacus (Linn.). Grey Parrot. *Hab.* West Africa. Largely imported from the west coast of Africa, and becomes domesticated, but does not breed in the Island.

Palcornis docilis (Vicill.). Green Parrakeet. *Hab.* West Africa. Kept as a cage-bird.

Melopsittacus undulatus (Shaw). "Shell-Parrot." *Hab.* Australia.

Kept as a cage-bird.

Cacatua sulphurea (Gm.). Lesser Yellow-crested Cockatoo. *Hab.* Moluccas.

A few kept as pet birds.

Lorius domicella (Vigors). Crimson Lory. *Hab.* New Guinea?
Kept as a cage-bird.

Columba livia, Linn. Rock-Dove. *Hab.* Europe.

Abundant in the Island; existing both in a wild and a domestic state. In the former, they frequent chiefly a place called the Waterfall, a perpendicular cliff about 300 feet in height, situated inland about two miles and a half from the sea, and take their daily flight to the cornfields of Longwood or Broad-bottom for food.

Geopelia tranquilla (Gould). "Ground-Dove." *Hab.* New South Wales.

Abundant all over the island. Generally to be seen in pairs, inhabiting both the tall firs and other trees on the highest land, and the rocky plains lower down.

? *Caccabis chukar* (J. E. Gray). "Partridge." *Hab.* Northern India.

The existence of this Partridge in St. Helena is mentioned in Cavendish's 'Travels' as early as the year 1588, where it is stated:—

"There are also upon this island a great store of Partridges, which are very tame, not making any great haste to fly away, though one come very near them, but only run away and get up into the cliffs. They differ very much from our Partridges which are in England both in bigness and also in colour."

Like the Pheasant, this bird is protected by game-laws, and only allowed to be shot during three months of the year. It abounds on the rocky outskirts of the Island, and only comes inland to feed in the corn-fields. Partridge-shooting in St. Helena is very fatiguing work, the ground to be gone over being very rough and precipitous; and it is quite necessary to

have two parties, one at the bottom of the valley and one at the top of the enclosing hills, in order to be sure of any sport at all. The birds also being very wild, and the coast very rugged, it is exceedingly difficult to get at them. They generally make their nests in the ledges of rock and in the samphire-bushes (*Salsola salsa*) on the open barren plains. Cats are their great enemies, and destroy both eggs and young. Although there appears to be no record to show whence the Partridge was introduced to St. Helena, it is most probably the Chukar-Partridge of Northern India; and as it differs somewhat in plumage, possibly change of climate or food may have produced the change. A closer examination of the bird, however, is desirable.

Phasianus torquatus, Gm. Ring-necked Pheasant. *Hab.* China.

Cavendish mentions Pheasants being found in St. Helena as early as 1588 in the following words:—

“There are likewise no less plenty of Pheasants in the island, which are also very big and fat.” They still exist abundantly, inhabiting the interior of the Island, and quite keep up the characteristics mentioned by Cavendish. They are protected by game-laws, which permit them to be killed, on payment of the license, for six weeks in the summer or autumn of each year; and hundreds of them are generally killed during one shooting-season. It finds plenty of covert, and generally makes its nest in the long tufty fields of Cow-grass (*Paspalum scrobiculatum*).

Gallus bankiva, Temm. Common Fowl. *Hab.* India.

Reared abundantly in the Island; and on the high lands exists in a state almost as wild as Pheasants. The Spanish, large black-and-white Malabar, and other breeds are kept.

Pavo cristatus, Linn. Pea-Fowl. *Hab.* India.

None now remain in the Island; but I include it here because it once existed in a feral state. It is stated that it inhabited the high lands and ridges, under cover chiefly of the indigenous plants; but the farmers found it so destructive to their gardens, that they took every opportunity of killing it; consequently, about half a century ago, they were exterminated.

Meleagris gallopavo (Linn.). Turkey. *Hab.* Mexico.

The existence of the Turkey in St. Helena dates back as far as 1588. Cavendish says, "We found, moreover, in this island plenty of Guinea-cocks, which we call Turkeys."

Numida meleagris (Linn). Guinea Fowl. *Hab.* West Africa.

Partly domesticated and partly wild, having recently been much encouraged in the Island, where it inhabits the high land.

CHARADRIUS PECUARIUS, Temm. Wire-bird.

This bird frequents chiefly the outskirts of the Island, and is generally to be seen running about on the hot stony plains, more or less covered with wire-grass (*Cynodon dactylon*). It feeds upon beetles and a small snail (*Succinea*, sp. ?), found adhering to and hiding under the rocks and stones, with which the ground is partly covered. It is rarely, but occasionally, seen inland, sometimes in pairs, sometimes in flocks of five or six. It lays, in the summer months of December and January, two eggs, in colour grey, with black markings. It is stated, upon the pretty good authority of several persons long resident in the Island, that this bird makes no nest, but lays its eggs in dry cowdung on the exposed open ground; it slightly covers them over, but does not sit upon them, merely returning occasionally to see that they are safe, and to take care of the young birds as soon as they are hatched. The colour of the eggs so much resembles the material in which they are laid that it is difficult to distinguish them from it without careful search. After heavy rain the Wire-bird may be seen frequenting and running along the edges of the pools of water; but generally it finds little water in the Island to indulge its wading propensities; this deprivation does not appear, however, to interfere with its happiness, for it is very doubtful if it ever leaves the Island.

This bird has, it seems, until very recently been confounded with a Cape species, *C. kittlitzii* (cf. Ibis, 1867, pp. 251, 252, note).

Anser ferus (Linn.). Domestic Goose. *Hab.* Europe.

Reared in the Island.

Anas boschas, Linn. Domestic Duck. *Hab.* Europe.
Reared abundantly in the Island.

Cairina moschata (Linn.). Muscovy Duck. *Hab.* South America.

A few have been imported into this island.

PROCELLARIA GLACIALOIDES, A. Smith. "Right-whale-bird."

Rare; two were caught with a common baited fishing-hook and line, in October 1868, off Spury Island.

PROCELLARIA, sp. ? "Mother Carey's Chicken."

A small species of Petrel frequents the sea around the Island, but is not very abundant; and I have never had an opportunity of examining a specimen so as to determine the species.

SULA, sp. ? "Booby."

This bird seldom occurs on the Island, but frequents the neighbourhood. It is often seen from shipboard near the Island, but I have not had an opportunity of examining a specimen.

TACHYPETES AQUILUS (Linn.). "Man-of-war-bird."

Although there is a part of the south-west coast designated "Man-of-war Roost," owing its name to this species, and there is still living evidence of its having once frequented the landing-steps at Jamestown, this bird is seldom now to be met with, nor is it easy to assign a reason for its disappearance from the Island.

PHAETON ÆTHEREUS (Linn.). Tropic-bird.

Very abundant on the southern and eastern, or windward coasts of the Island, which, as being furthest away from the haunts of man, and also more precipitous than other parts, are well adapted to the bird's peculiar habit of dropping itself down from a ledge in order to enable it to rise on the wing, a feat which it is unable to accomplish when sitting on level ground. This bird inhabits holes in the perpendicular face of the cliffs, from one to two thousand feet above the sea, and goes out in the early morning to fish for food, returning homewards about 3 or 4 o'clock in the afternoon. At this time of the day the Tropic-bird is easily shot; and it is to be regretted that these beautiful and peaceful creatures suffer so much persecution as

they do for the sake of the plumes they afford for ladies' hats. Tropic-bird-shooting at St. Helena is accomplished by taking up a position on the ledges above their holes and nests, while a boy is sent down in the valley or ravine below to pick up the birds as they fall. Cats run in a wild state, and are great enemies to this bird, as well as to the game-birds in the Island, by preying on the young.

STERNA FULIGINOSA (Gmel.). "Egg-bird."

Not very abundant, but inhabits the rocky islets off the coast, George's and Spury Islands, in considerable numbers. It does not remain all the year round at St. Helena, and probably migrates to Ascension, nearly seven hundred miles distant, where these birds are to be found in tens of thousands, and are so plentiful at a spot called "Wide-awake Fair" that they may be knocked down by hundreds with a walking-stick. It is there protected for the sake of its eggs, which form an article of food with the inhabitants. It arrives in St. Helena at the end of the year, and lays its eggs in January, February, and March. Much risk of life is run in obtaining the eggs, which are brought to the market, and by some persons are considered a delicacy equal to Plovers'. This bird seldom, if ever, comes near the inhabited parts of the Island.

32. *GYGIS CANDIDA* (Wagl.). "White bird."

One of the most abundant sea-birds in the Island, in numbers perhaps next to the Noddy. It associates intimately with the Tropic-bird, but comes more inland, building its nest in rocky cliffs and dikes of columnar basalt, such as Lot, Lot's wife, and others situated several miles from the sea-coast; occasionally it is seen flying high over the central part of the Island. Its curiosity is very remarkable; for it is easily attracted by a white object, and will come within a foot or two, often in a disagreeable manner, peering into the face of a person wearing a white hat or some white article of clothing.

ANOUS STOLIDUS (Linn.). "Noddy-Tern."

A less shy and retiring species than the other sea-birds generally are at St. Helena, frequenting the roadstead, where, in the neighbourhood of ships riding at anchor, it may be seen sitting on the surface of the water or on boats. It inhabits

principally the cliffs of the islets, such as Egg Island, where it breeds in swarms. It does not appear to associate with either the Tropic- or the White bird, but is one of the most abundant species at St. Helena.

[** Some time previously to the receipt of the foregoing paper, our good friend Captain Beavan very kindly forwarded us some notes on the Ornithology of St. Helena, which, for want of room, we were then unable to print. We feel, therefore, that some apology would be due to him for the preference we have now shown to the article of a later contributor, were it not for the fact that Mr. Melliss has been resident in the island for some years, whereas Captain Beavan had paid but a passing visit to it when on his homeward voyage in 1867, and accordingly the former has had many more opportunities of making observations than the latter. That Captain Beavan, however (as would be expected), used his limited time (only two days) well is plain from his having included in his notes every *wild* species mentioned by Mr. Melliss; and he further obliged us by sending us a copy of 'The St. Helena Almanac and Annual Register' for 1867, published at the office of the Government, wherein is given a very brief notice of the vertebrate fauna of this island. From this publication may also be gathered the fact that some other species, not included by Mr. Melliss, have been imported into the Island: thus, in a list of "Remarkable Events," it is mentioned that in the year 1824 "English Singing Birds" were introduced on the 18th November, and in 1852 "Thrushes, Blackbirds, Larks, and Starlings," were imported; again, in 1853, "South-American Mocking-Birds" were introduced. From the silence of Mr. Melliss as to these species, we may safely conclude that the attempts to acclimatize them, for some reason or other, failed.—ED.]

VII.—*Additional Notes on Mr. Lawrence's List of Costa-Rica Birds.* By OSBERT SALVIN, M.A., F.Z.S., &c.

SINCE my last communication on this subject (*Ibis*, 1869, pp. 310-319), Mr. Lawrence has concluded his Catalogue of

Birds found in Costa Rica (Ann. Lyc. N. H. New York, ix. pp. 141-149*), and appended thereto some remarks correcting and confirming his previous identification of certain species. A supplementary list is also added of such species as had been subsequently received by the Smithsonian Institution.

Mr. Godman's and my collection has also been enriched by some species not included in Mr. Lawrence's catalogue. It is my intention now to enumerate these, and to add a few rectifications of nomenclature that additional material has enabled me to ascertain.

(58.) *BASILEUTERUS MELANOTIS*.

Two specimens of a *Basileuterus*, agreeing accurately with Mr. Lawrence's description, have been recently sent us by Arcé from Veragua. They are hardly appreciably darker on the upper surface than Bogotá and Ecuador specimens attributed by Mr. Sclater (Cat. Am. B. p. 34) to *B. bivittatus* (Lafr. & D'Orb.); in other respects they are quite the same. These skins answer to D'Orbigny's description (Voy. Ois. p. 324), and also to that of *Myiodiocetes tristriatus*, Tsch. (Faun. Per. p. 193). I have not seen Bolivian or Peruvian specimens, but I have little doubt that the same species is found in all the above-mentioned countries.

(65.) *STELGIDOPTERYX FULVIGULA*.

Since writing my note on this species (Ibis, 1869, p. 313), we have received a specimen from Carmiol which, upon examination, proved to be the true *S. fulvigula*, Baird, and shows that the specimen so called which we received from the Smithsonian Institution is not *S. fulvigula* at all, but *S. fulvipennis*, Sel., agreeing, as before stated, with Guatemalan examples attributed to that species. The Smithsonian specimen (No. 41246)

* There is nothing on the second portion of this catalogue to show that it was issued some months later than the first portion. What appears to have been the case is that separate copies of the latter were struck off and distributed by Mr. Lawrence some time before the issue of the part of the Annals of the New-York Lyceum which contains the paper. What is the true date of this communication? The first portion bears the date "April 1868" (*qu.* that of reading?); and in the second, reference is made to the number of 'Exotic Ornithology' issued in October 1868.

was collected at "Atiro *, Costa Rica, 15/3 65, by J. Carmiol." The name *Stelgidopteryx fulvigula* on the label is in Mr. Lawrence's handwriting.

It remains, then, to compare our recently acquired specimen with *S. uropygialis*, Lawr., of Panama; and I must say that I cannot perceive any difference whatever either in size or coloration, and conclude that the specimens upon which the species was founded are immature, as Prof. Baird (Rev. Am. B. p. 318) seems half to suspect.

Anyhow there are two species of this form in Costa Rica:—

1. STELGIDOPTERYX UROPYGIALIS (Lawr.), Ibis, 1863, p. 181. *S. fulvigula*, Baird, Rev. Am. B. p. 318.

2. STELGIDOPTERYX FULVIPENNIS, Sel.; Baird, Rev. Am. B. p. 316. *S. fulvigula*, Lawr., Ann. Lyc. N. Y. p. 96 (*partim*).

It will be seen that the specimens upon which Prof. Baird founded *S. fulvigula* were all collected at Angostura. Mr. Lawrence, on the other hand, gives the locality "Atiro" only. Hence it would appear that Mr. Lawrence had not the types of *S. fulvigula* before him when compiling his list; and therefore probably the Atirro specimens are all *S. fulvipennis*.

(118.) TACHYPHONUS PROPINQUUS.

The position of this species is at present anything but satisfactory. Mr. Lawrence changed the name of the bird from *T. rubrifrons* to *T. propinquus* (Proc. Ac. Philad. 1867, p. 94), because it was shown that the red forehead, from which the name was derived, was due to a stain and not to natural colour. The name *propinquus* was chosen from the near relationship of the supposed species to *T. xanthopygius*, Sel.; but no differential characters whatever were given. I imagine that Mr. McLeannan's statement that the sexes were alike has misled Mr. Lawrence; but, with all due deference to Mr. McLeannan's original observations, I cannot help thinking that in this case he was wrong. Analogy certainly points to the existence of a difference between the coloration of the sexes in this species in a degree similar to what we find in *T. xanthopygius*. Indeed the species would not be a *Tachyphonus* at all did not a difference

* Lege "Atirro," cf. Von Frantzius, J. f. Orn. 1869, p. 201, note.

exist between the coloration of male and female. What I believe to be the actual state of the case is this, that neither Mr. Lawrence nor I have ever seen an adult male of this form either from Panama or north of the Isthmus. From a female specimen in our collection from Panama, I feel convinced that the so called species is nothing more than *T. xanthopygius*, to which both Mr. Lawrence's names must be applied as synonyms.

(171.) *SYNALLAXIS NIGRIFUMOSA*.

Mr. Selater and I have carefully compared an extensive series of specimens of this form, from Costa Rica, Panama, and New Granada, with the type of *S. pudica*, Sel. (Cat. Am. B. p. 151), and have come to the conclusion that Costa-Rican are undistinguishable specifically from more southern examples, and that the difference observable in the intensity of the dark colouring in some individuals is due to age and sex.

(177.) *AUTOMOLUS RUFESCENS*.

A specimen sent us by Carmiol, corresponding accurately with Mr. Lawrence's description of the above-named species, differs in no way from the type-specimen of *Philydor panerythrus*, Sel.*; in Mr. Selater's collection, with which I have also compared it.

(179.) *ANABAZENOPS LINEATUS*.

Having before me four specimens of this species from Costa Rica and Veragua, I am able to state that they do not differ from the types of *A. subalaris*, Sel. (P. Z. S. 1859, p. 141), with which I have compared them. The specimen mentioned in Mr. Selater's 'Catalogue,' no. 971 (b.) from Pallatanga, as "perhaps different" is in immature dress. Two of our Veraguan specimens are in similar plumage, and differ from the adult in having the breast deep rufous, the longitudinal light markings not appearing; the head too is much darker.

+ (197.) *THAMNOPHILUS PUNCTATUS*.

Carmiol has recently sent examples of this species; and we have also received a number of specimens from Arcé from Veragua. According to the latter the sexes are almost similar,

* *Philydor semirufus*, Sel., Cat. Am. B. Supp. p. 360: *P. panerythrus*, *Id.*, P. Z. S., 1862, p. 110. Ex N. Granada (Bogotá).

the female being rather more ashy on the under surface than the male.

(283 & 284.) *CAPITO BOURCIERI* and *C. HARTLAUBI*.

It has long struck me as singular that these two supposed species should always be found together. Upon examination of all the specimens that had the sexes marked, I found that all the *C. bourcierii* were males, and all the *C. hartlaubi* females, suggesting that the two supposed species were sexes of one and the same. In a small collection from Ecuador, obtained from Mr. Gould, I found a specimen with the head tinged with golden yellow, just as in *C. hartlaubi*; while the forehead and throat, as well as a few feathers on the sides of the occiput, were red. In fact this specimen (a young male) was shot while it was putting off the female *hartlaubi* plumage, and assuming the male *bourcierii* plumage; and in this transitional state convinced me that the sexes of one species had hitherto been regarded as distinct. Looking further into the question, I found that dissected specimens of *C. melanotis*, Sel., showed that they were all females, and that those called *C. aurantiicollis* were all males, and that where one was found the other was sure also to be with it. It also became apparent that the females of *C. aurantiicollis* and *C. richardsoni* had been put together to form one species, *C. melanotis*, and that they had nothing to do with *C. hartlaubi* (the female of *C. bourcierii*) as has been supposed. Never having seen specimens of either *C. glaucogularis*, Tsch., or *C. tschudii*, Sel., I can say nothing decidedly respecting them, but I would suggest that they too may be the sexes of one species, *C. glaucogularis*, Tschudi.

The synonymy of the other species, according to my conviction, will now stand as follows:—

1. *CAPITO BOURCIERI* (Lafr.).

Micropogon bourcierii, Lafr., R. Z. 1845, p. 179, and 1849, p. 116, t. 3. *Capito bourcierii*, Gray, Gen. B. ii. p. 430; Sel., Ibis, 1861, p. 188, Cat. Am. B. p. 329; Schlegel, Mus. P.-B. *Buccones*, p. 58; Lawr., Ann. Lyc. N. Y. ix. p. 130. *Eubucco bourcierii*, Bp. Consp. Av. i. p. 141. *Micropogon hartlaubi*, Lafr., R. Z. 1845, p. 180, 1849, p. 176, t. 6. *Capito*

hartlaubi, Scl., Ibis, 1861, p. 189, Cat. Am. B. p. 330; Schlegel, Mus. P.-B. *Buccones*, p. 61; Lawr., Ann. Lyc. N. Y. ix. p. 130. *C. capistratus*, Eyton, Contr. Orn. 1849, p. 131. *Megalema capistratus*, Id., op. cit. 1850, p. 29, t. 45, *Eubucco hartlaubi*, Scl.

Hab. New Granada; Costa Rica (*Carmioli*).

It will be observed that skins of the sexes, according to my view, of this species have been associated together in collections ever since its first introduction to science by Lafresnaye in 1845, when the sexes were described in the same paper as two species; and, again, the recent discovery of the bird in Costa Rica shows both sexes occurring together.

As already observed by Mr. Sclater (Ibis, 1861, p. 188), specimens from Ecuador are larger than those from New Granada. This difference is especially observable in the bill, which is much stouter and longer, and of a clearer yellow colour. The wings of the two races are of the same length. I also observe that the red colouring of the under surface of the Ecuadorean bird is confined to the throat and upper breast, and does not spread downwards over the chest as in the more northern race. Costa-Rican examples are just like New-Granadian as regards the size of the bill; but the breast of the male is rather more golden; in the female the green of the throat is slightly deeper, and the orange of the chest-band rather more dispersed over the under surface. These differences are very slight, and hardly warrant the separation of these races as distinct species.

2. CAPITO RICHARDSONI, G. R. Gray.

Capito richardsoni, Gray, Gen. B. ii. p. 430, t. 106.; Scl., Ibis, 1861, p. 189, Cat. Am. B. p. 329; Schlegel, Mus. P.-B. *Buccones*, p. 59. *Eubucco richardsoni*, Bp. Consp. Av. i. p. 142. *Capito sulphureus*, Eyton, Cont. Orn. 1849, p. 130. *C. melanotis*, Scl., Ibis, 1861, 190 (*partim*); *C. hartlaubi*, Schlegel, Mus. P.-B. *Buccones*, p. 61 (*partim*).

Hab. New Granada.

3. CAPITO AURANTICOLLIS (Sclater).

Eubucco aurantiicollis, Scl., P. Z. S. 1857, p. 267. *Capito aurantiicollis*, Id., Ibis, 1861, p. 189; Cat. Am. B. p. 329;

Schlegel, Mus. P.-B. *Buccones*, p. 60. *Eubucco hartlaubi* "♀ ant juv.," *Scl.*, P. Z. S., 1857, p. 267. *Capito hartlaubi*, Schlegel, *t. c.* p. 62 (*partim*). *C. melanotis*, *Scl.*, *Ibis*, 1861, p. 190 (*partim*); *Scl. & Salv.* P. Z. S. 1866, p. 196.

Hab. Upper Amazon (*Bates*, *Hauxwell*, *Bartlett*); Ecuador, Rio Napo.

This species seems to represent in the region of the Upper Amazon and Ecuador the New-Granadian *C. richardsoni*. The female is larger than that of *C. richardsoni*, and has the bill stouter; otherwise, as might be anticipated, they closely resemble one another in coloration.

This arrangement, it will be observed, provides females for each of the species *C. bourcierii*, *C. richardsoni*, and *C. aurantii-collis*, all of which have hitherto been placed as if the males alone were known. After admitting the great disparity between the sexes of *C. maculicoronatus*, Law., the differences here observed are less surprising.

(401 & 402.) *CHRYSOTIS PULVERULENTA* and *C. VIRIDIGENALIS*.

Further information respecting the birds thus named would be acceptable. At present I have only seen *C. guatemalæ* (added to the list in Mr. Lawrence's Appendix) and *C. diademata*, Spix. Our specimens from Costa Rica and Veragua of the last-named Parrot agree with others from Panama, which Dr. Finsch (*Papageien*, ii. p. 545) considers identical with *C. diademata*.

In his Appendix, Mr. Lawrence (*op. cit.* pp. 144, 145) adds seven species to the previous list, describing a Tyrant-Flycatcher, under the name "*Pogonotriccus? zeledoni*," and then goes on to correct some of his previous determinations. To most of these corrections I have already drawn attention in my former paper. As regards *Asturina nitida**, formerly so called, our specimens from Panama, both adult and young, belong decidedly to the southern, and not to the more northern race (*cf.* *Exot. Orn.* t. 79). The northern bird has since been called *A. polionota* by Dr. Cabanis (*J. f. O.* 1869, p. 208), which

* See *Scl. & Salv.*, P. Z. S. 1868, p. 173.

name must be treated as a synonym of *A. plagiata*, Schl. In his note on *Geotrygon chiriquensis*, Mr. Lawrence complains that Mr. Sclater and I misled him into giving a new name to the species, by having wrongly united *G. albifacies* to *G. chiriquensis* (Exot. Orn. t. 39); but regretting, as I do, the error we made, I think Mr. Lawrence was in a position to put us right when he had the true *G. chiriquensis* before him, having indeed the same materials in his hands which ultimately gave us the clue to our error. The anomalous fact of a distinct species occurring in Costa Rica, and intercepting the range of our so-called *G. chiriquensis* was sufficient to render the reopening of the question a prudent step.

I now record the additional species, all of which, except nos. 7 and 19, have been forwarded to us by Mr. Carmiol since the publication of my former notes:—

1. GEOTHYLPIS POLIOCEPHALA, Baird, Rev. Am. B. p. 225 : *G. æquinotialis*, Sel. & Salv., Ibis, 1860, p. 273.

2. STELGIDOPTERYX FULVIPENNIS (Sel.), (*vide suprà*).

3. CALLISTE FLORIDA, Sel. & Salv., P. Z. S. 1869, p. 416, t. xxviii.

4. HÆMOPHILA RUFICAUDA (Bp.); Sel., Cat. Am. B. p. 118.

In a former note on *Zonotrichia melanotis*, Lawr. (Ibis, 1868, p. 115), I inadvertently wrote *humeralis* for *ruficauda*, certainly intending to say that *Z. melanotis* appeared to be allied to, or perhaps the same as *H. ruficauda*. I have now seen both species, and am satisfied they are distinct, though near allies.

5. CYANOCITTA ORNATA (Less.); Sel., Cat. Am. B. p. 143.

6. CALOCITTA FORMOSA (Sw.); Sel., Cat. Am. B. p. 145.

The acquisition of these two species of *Corvidæ* makes a great addition to the Bird-fauna of Costa Rica.

7. THAMNOPHILUS IMMACULATUS, Lafr., R. Z. 1845, p. 340 : Sel., Cat. Am. B. p. 173 : *Phlogopsis ellisiana*, Sel., P. Z. S. 1855, p. 109, t. 100, Cat. Am. B. Ap. p. 360 (♀ aut ♂ juv.).

We possess a single male specimen of this species, obtained by Arcé at Tucurriquí in Costa Rica. The same collector has sent us adult and young males from Veragua. The latter agree very well with the specimen (not the type, which is in the British Museum) in Mr. Selater's cabinet called *Phlogopsis ellisiana*. *T. immaculatus* must not be confounded with *T. leucotus* of Spix (Av. Bras. ii. p. 28, t. 39, f. 2), of which *T. melanoceph* is the female. Males of the two species are very much alike; but *T. immaculatus* has a longer tail. The females are quite different.

— 8. LEPTOPOGON SUPERCILIARIS, Cab.; Sel., Cat. Am. B. p. 214.

We have also received this species from Veragua (*Arcé*).

— 9. CONTOPUS OCHRACEUS, Sel. & Salv., P. Z. S. 1869, p. 419.

— 10. TROGON MELANOCEPHALUS, Gould, Mon. Trogonidæ, pl.

— 11. AMAZILIA CINNAMOMEA (Less.); Gould, Intr. Troch. p. 156.

— 12. HARPAGUS FASCIATUS, Lawr., Proc. Ac. Philad., 1868, p. 429: *H. bidentatus*, Sel. & Salv., Ibis, 1859, p. 219.

We have two specimens in apparently adult plumage of this form, which seems to differ from the South-American *H. bidentatus*; but the phases of plumage of the latter are so numerous that I feel rather sceptical as to whether the Central-American race will ultimately rank as a species.

— 13. COLUMBA RUFINA, Temm., Pig. t. 24.

+ 14. CRYPTURUS BOUCARDI (Sel.); Sel. & Salv., Exot. Orn. t. 46.

— 15. ARAMUS HOLOSTICTUS (Cab.), J. f. O. 1856, p. 426.

— 16. PORPHYRIO MARTINICUS (L.); Sel. & Salv., P. Z. S. 1868, p. 459.

— 17. GALLINULA GALEATA, Licht.; Sel. & Salv., P. Z. S. 1868, p. 462.

18. *PARRA GYMNOTOMA*, Wagl. ; *Sci. & Salv.*, *Ibis*, 1859, p. 231.

19. *PHAETON FLAVIROSTRIS*, Brandt, *Mém. Ac. St. Pétersb. Sc. Nat.* iii. (1840), p. 263, t. iii. f. 1, 2.

Gulf of Nicoya (*Arcé*).

The Ornis of Costa Rica, as regards numbers, will now stand as follows :—

Number as given in Mr. Lawrence's Catalogue, with Appendix.	511
Additions given by myself (<i>Ibis</i> , 1869, p. 319) less two also included by Mr. Lawrence	13—2 11
Additions now given	19
	—541
Deduct 6 Veraguan Humming-birds, not yet recorded from Costa Rica proper	6
Also 14 species, mentioned in my paper (<i>Ibis</i> , 1869, p. 318)	14
<i>Capito hartlaubi</i> , now shown to be the female of <i>C. bourcierii</i>	1
	— 21
Total remaining	<u>520</u>

It must be observed that the orders *Grallæ*, *Lamellirostres*, *Steganopodes*, and *Pygopodes* of Mr. Lawrence's catalogue are but poorly represented; indeed the *Laridæ* are altogether omitted. Considerable additions may be anticipated amongst the members of these orders, which are known to frequent the coasts of Central America.

VIII.—Notices of Recent Ornithological Publications.

OWING to the large number of works published within the last nine months which demand our attention, the notice we can accord to them must necessarily be far more brief than we could wish, and in several instances we cannot attempt to give such an abstract of their contents as many of them deserve.

1. ENGLISH.

The first portion of Mr. George Gray's 'Hand-List'*, the in-

* Hand-List of Genera and Species of Birds, distinguishing those contained in the British Museum. By G. R. GRAY, F.R.S. &c. Assistant

tended publication of which we had the pleasure of announcing in our last number (*Ibis*, 1869, p. 464) has just appeared; and we do not hesitate to place it, though the most recent in point of time, at the head of our long list. Its importance we are sure will be fully recognized by every working ornithologist, and for working ornithologists it is especially intended. It has reached us so very lately that we will not attempt any criticism of it; indeed, to criticize this work properly would require an amount of labour certainly not less than that which the author has given to its preparation; and, moreover, a commentary upon it could easily be made to occupy at least a whole volume of this *Journal*. We strongly recommend Mr. Gray's 'Hand-List' to our readers, not that we would have them believe that we regard it as free from spot or blemish, but because we think that by their assistance many of its imperfections—imperfections some of them, we must add, inseparable from a work of this kind, may be removed, since we have good reason for saying that its author will gladly receive any suggestions or corrections of errors that may be pointed out to him with a view to amendment in the event of a second edition being required. It is perhaps needful for us to observe that, in forming an opinion of this book, ornithologists must be careful to consider not what, according to their own ideas, its scope might have been, but what its scope is. Mr. Gray, we understand, has for many years past been in the habit of keeping for his own private use, in the discharge of his public duties, a manuscript list containing the name of every genus or species of bird, entering each as it was described, with a reference to the plate in which it was figured (should that have been the case) and the locality whence it came. Finding this list of great assistance to himself, he thought that, if published, it would be of service to others, and being also called upon for a new edition of his well-known and exceedingly useful 'Catalogue of the Genera and Subgenera of Birds,' which is now out of print, he determined upon taking the steps necessary for offering his own private 'Hand-List' to the public. The result we have

before us, and extremely grateful are we to Mr. Gray for it. Omitting synonyms, it enumerates 1497 genera and subgenera, and 6057 species, while a few more of each are added in the "Errata and Appendix," bringing the whole up to the time of printing off the last sheet, the beginning of December, we believe; and this first part, we understand, comprehends, as near as may be, one-half the entire work. The second part, we are told, is in a far-advanced state, and we confidently look forward to being able to congratulate the author on its completion in the course of the year. Mr. Gray, in his numerous publications, has set such an excellent example to others by almost invariably including an index to the genera and species mentioned in them, that we trust he will not omit that indispensable adjunct to the present work, where it is undoubtedly most urgently required, and we hope he will kindly pardon our suggesting the want.

Among the "untiring divinities" of the ornithological Olympus, few have known less rest than Mr. Gould; but during the past year he has, if we are not mistaken, outdone any of his previous labours—to say nothing of those of his compeers. Here is a list of them:—

Part II. of the second edition of the 'Monograph of the *Trogonidae*,' published "March 1st, 1869," contains figures of:—

Pharomacrus pavoninus. Brazil.	Harpactes hodgsoni. India.
Prionotelus temnurus. Cuba.	— ardens. Philippine Islands.
Trogon elegans. Honduras.	— kasumba. Malacca, Sumatra,
— surucua. Paraguay.	Borneo.
— aurantius. Brazil.	— reinwardti. Java.
— viridis. Trinidad, Northern	— mackloti. Sumatra.
S. America.	— orescius. Java.
Troctes massenæ. Guatemala,	
Costa Rica.	

But it is fair to add that the plates representing the oriental species are reproduced from the 'Birds of Asia,' though the letterpress accompanying them is rewritten.

Part XX. of this last-named work, published "April 1st, 1869," gives us portraits of:—

Coracias indica. India.
 — *affinis*. Assam, Siam, &c.
 — *temmincki*. Celebes, Moluccas.
Phasianus reevesi. China.
 — *colchicus*. Caucasus, Asia Minor.
Cerionis temmincki. China?
Puerasia xanthospila. North China.

Turnix dussumieri. India.
Dryomochares stellatus. Nepaul.
Anthus cervinus. N. Asia, N. Europe.
Emberiza fucata. China, Japan.
 — *rustica*. N. Asia, N. Europe.
Glycospina huttoni. India.
Regulus himalayanus. India.
Glareola lactea. India.

Part V. of the "Supplement" to the 'Birds of Australia,' published "August 1st, 1869," and completing the first of the additional volumes of that magnificent work, which will for all time carry its author's name down to posterity, includes:—

Strix candida. Queensland, India.
Pitta mackloti. Cape York, New Guinea.
Ptilonorhynchus rawnsleyi. Queensland.
Orthonyx spaldingi. Queensland.
Artamus melanops. S. Australia.
Eopsaltria leucura. Cape York.
Monarcha albiventris. Cape York.

Ptilotis notata. Cape York.
 — *cockerelli*. Cape York.
Sittella striata. Cape York.
Casuaris australis, Cape York.
 — *uniappendiculatus*. New Guinea?, Salawatty.
Rallina tricolor. Cape York.
Gallinula ruficrissa. Queensland.

All these species but two, it will be seen, come from the northern part of Australia, and especially from the Cape-York district, in Queensland, the youngest of our southern colonies. *Strix walleri*, Diggles (*cf.* *Ibis*, 1868, p. 118), proves, on a comparison of specimens, to be the well-known Indian species *S. candida*, Tickell, and is accordingly here figured under that name. Referring to a suggestion formerly made in this Journal (*Ibis*, 1868, p. 348) as to the possibility of Australian examples attributed to *Pitta mackloti* being specifically distinct from the New-Guinea bird of that name, Mr. Gould says that they are undoubtedly inseparable; and thus Mr. Krefft's proposed *P. digglesi* (*Ibis*, 1869, pp. 349, 350) falls to the ground. *Ptilonorhynchus rawnsleyi* (*cf.* *Ibis*, 1868, p. 348), though figured, is considered by Mr. Gould to be very possibly a hybrid between *P. holosericeus* and *Sericulus melinus*. The *Eopsaltria*, *Ptilotis cockerelli*, the *Sittella*, and the *Gallinula* are four new and fine species recently described by him in the 'Annals and Magazine

of Natural History' (4th ser. iv. pp. 108–110). Each of the species of *Casuarinus* is illustrated by two plates, one representing the birds at full length, the other the heads the natural size; and the author agrees with us (*Ibis*, 1868, p. 348) in regarding the *C. johnsoni* of Mr. Krefft as synonymous with the previously indicated *C. australis* of Wall. The other species, *C. uniappendiculatus*, it may be remembered, was originally described and figured by Dr. Bennett and Mr. Blyth in this Journal (*Ibis*, 1860, pp. 402, 403, pl. xiv.) from young birds living in captivity. It is the same as *C. kaupi*, Von Rosenberg (*J. f. O.* 1861, p. 44, pl. 1 *bis*), a name which appears to yield in priority to that applied by Mr. Blyth.

Of the 'Birds of Great Britain,' Part XV. published "August 1st, 1869," contains figures of:—

Goshawk.	Stone-Plover or Thick-knee.
House-Martin.	Purple Sandpiper.
Sky-Lark.	Harlequin Duck.
Short-toed Lark.	Golden-eye.
Greenfinch.	Pin-tailed Duck.
Rock-Thrush.	Curlew.
Missel-Thrush.	Greenshank.
Yellow-browed Warbler.	

While Part XVI., published "September 1st, 1869," comprises:—

Orange-legged Hobby.	Ruddy Sheldrake.
Barn-Owl.	Scaup Duck.
Alpine Swift.	Black Guillemot.
Red-breasted Flycatcher.	Kittiwake.
White's Thrush.	Little Gull.
Wood-Lark.	Storm-Petrel.
Common Bunting.	Fork-tailed Storm-Petrel.
Sheldrake.	

Several of these species now appear for the first time in a work on British ornithology; but Mr. Gould continues (most wisely, we think) to refuse admission to many stragglers—mostly of transatlantic origin, which from time to time make their appearance on our shores. We cannot, however, for want of room extend our remarks further; but, before we leave this subject, we must express our regret for a very careless misstate-

ment which was made on the last occasion of this beautiful work being noticed in these pages (Ibis, 1869, pp. 108, 109). Mr. Gould was then blamed for having omitted any reference to a passage in the work of an old author containing some information with respect to the Spoonbill. This was altogether wrong, for the information in question was duly and appropriately cited, and we have unreservedly to tender our apologies to Mr. Gould for having permitted a charge so entirely unfounded to be made.

Since we last noticed (Ibis, 1869, pp. 215, 216) Mr. Sharpe's 'Kingfishers'*, three more parts of it have appeared, in every way equal to their predecessors. By accident we, on a former occasion, stated that each part contained "six" plates, we should have said *eight*; and they are all very successful examples of Mr. Keulemans's handiwork. The author, as appears by a recent communication (Nov. 11, 1869) of his to the Zoological Society, was wrong in assigning the name *Corythornis vintsioides* (Eyd. & Gerv.) to the Madagascar species of that genus, which seems to be the true *Alcedo cristata* of Linnæus. Dr. Pucheran's argument (R. Z. 1861, pp. 337-341) seems to be unanswerable on this point; and if so, the common species of the African continent must bear the name of *C. cyanostigma* (Rüpp.) instead of *C. cristata*. *Dacelo fallax*, Schlegel, has been considered by Dr. Salvadori, in a paper to be noticed presently, entitled to generic separation, on account of its connecting the genera *Ceyx* and *Ispidina*; and, accordingly, it is here figured under the name of *Ceycopsis fallax*. *Haleyon cyanoleuca*, from Angola, is recognized as distinct from *H. senegalensis*. Though according a place in his letterpress to *Ceryle lugubris*, Mr. Sharpe is no doubt right in not deeming it worth a figure, so closely does it resemble *C. guttata*; on the other hand, the *C. sharpii* lately described by Mr. Gould (Ann. & Mag. N. H. 4th ser. iv. p. 271) seems to be as certainly a good species, and will bear the name of the ardent halcyonologist whose work we are noticing. It is very gratifying to observe that the custodians of the Museums of Basle and Berlin

* A Monograph of the *Alcedinidæ* or Kingfishers, by R. B. SHARPE. Part iv. March 1st, 1869; Part v. July 1st, 1869; Part vi. October 6th, 1869. London: roy. 8vo.

have entrusted the author with the type-specimens of *Ispidina ruficeps* and *Halcyon orientalis* respectively, in order that his plates might be drawn from them. We are glad to learn that the encouragement with which Mr. Sharpe has met in the course of the present work is such as to induce the hope that on its conclusion he may set about another similar monograph.

Captain F. W. Hutton's paper "On the Mechanical Principles involved in the Sailing Flight of the Albatros," printed in the 'Philosophical Magazine' for August last, was most kindly forwarded by the author for insertion in this Journal, which, as our readers will remember, was honoured by his former remarks on the same subject (*Ibis*, 1865, pp. 294-298)—remarks which have attracted considerable attention elsewhere. It appeared to us, however, on examination of the paper, that our pages would scarcely be a suitable vehicle for bringing to the notice of those best qualified to deal with them investigations in a great measure purely mathematical. We therefore handed over the manuscript to our more learned contemporary, who gladly availed himself of it. On our part, it seems due to the author that this fact should be stated, and we hope shortly to present such of our readers as do not happen to be mathematicians, with an intelligible abstract, not only of Captain Hutton's researches, but also of those which have lately been carried on and illustrated by most ingenious experiments by Professor Marey.

Dr. Bowden, in his 'Naturalist in Norway'*, sneers at the people of that country, because a work on its natural history "would not pay." As impartial judges we fear there is not much credit due to the land in which such a book as Dr. Bowden's could be published with profit. The author has but the very slightest smattering of information respecting the zoological part of his subject, and has taken but few pains to learn

* The Naturalist in Norway; or notes on the wild Animals, Birds, Fishes, and Plants of that Country. By Rev. J. BOWDEN, LL.D. &c. London: 1869. 8vo, pp. 263.

more. It is very easy for any bookmaker to bring Pontoppidan into ridicule; but such a bookmaker seldom recollects that the old bishop was at least not behind the science of the day, while the case may be very different with a consular chaplain.

Mr. Sterland's '*Birds of Sherwood Forest*'* is a very unpretending little volume, which we have much pleasure in recommending to our readers; for, though not altogether free from errors, it bears the mark of labour conscientiously applied, and many of the author's observations and reflections well deserve attention. In the district to which he has limited himself, Mr. Sterland has met with 172 species; but the authority of some of them seems to be rather questionable. For instance, there is the Golden Eagle included as a chance-visitor, but without anything to show that the bird seen and not obtained was not a Sea-Eagle, as it is far more likely to have been. Mr. Sterland assures us, on the strength of his own "careful and repeated observations," that it is the Barn-Owl which hoots, while the Tawny Owl screeches. We cannot attempt any explanation of this mistake (for mistake we believe it to be), since, though we must confess we have never enjoyed the acquaintance of any Sherwood-Forest Owls, we do not suppose that they depart from the habits of their brethren in the rest of England or on the Continent. Hitherto Sir William Jardine has been the only ornithologist in the world who has been so fortunate as to hear the Barn-Owl utter the cry which most observers, ourselves among them, have thought to be peculiar to the other species; but now Mr. Sterland ranges himself as a witness on the same side, and even goes further, we apprehend, than Sir William, by declaring that the Tawny Owl "screeches, and rarely, if ever, hoots"—this last assertion being one that will be contradicted by the experience of most of our readers. However, leaving this point as one on which we must "agree to differ," we must notice a few points of interest in Mr. Sterland's work, and herein especially mention his remarks on the oil-gland in

* *The Birds of Sherwood Forest. With notes on their Habits, Nesting, Migrations, &c.* By W. J. STERLAND. London: 1869. 8vo, pp. 244.

birds (pp. 205–213 and 236–239). He tells us that “some birds are furnished with only one oil-gland on the rump, while others have two”—the former being without exception such as are commonly termed “Land-birds,” and the latter “Water-birds,” with some additions. If the author is not acquainted with the researches of Nitzsch on this subject, he will perhaps thank us for referring him to the translation (chap. viii.) of that naturalist’s ‘Pterylography,’ lately published by the Ray Society, where he will see that this difference is rather one of name than of nature; since we believe that the gland, when it exists, is always single though often divided into two lobes. Mr. Sterland appends to his work a list of the species he has examined (249 in number) in the course of his investigations, and tells us as their result that he does not venture to assert that he is certain of the true use of the glands; but he has no hesitation in declaring “that they are simply excretory.” We bound to remark that his conclusion is not entirely satisfactory to us. If the glands are “excretory,” in the technical sense of the word, it is a very singular fact in the animal kingdom; and to say that they are “simply excretory,” precludes the idea of their being “secretory;” while it is, we think, manifest that they do secrete the matter they contain. The number of instances of the Black Redstart breeding in this country (*cf.* Ibis, 1865, pp. 21, 22) is added to by Mr. Sterland on what appears to be very satisfactory evidence, as is also the case with the Tufted Duck (*cf. tom. cit.* p. 446); but we cannot allow his supposed Garganey’s nest (p. 220) to pass unchallenged. The collector must indeed be “experienced” who could discriminate between the eggs of that bird and of a Teal. In conclusion, let us say that Mr. Sterland’s book is of a kind we should like to see many more, that his acquaintance with other than “British” birds has a perceptibly beneficial effect on the work, and, finally, that the volume possesses the great merit of a very good index.

Mr. Cecil Smith’s book* aims at being a more complete performance than that last noticed; for its author deems it neces-

* The Birds of Somersetshire. By CECIL SMITH, of Lydeard House, near Taunton. London: 1869. 8vo, pp. 643.

sary to give a full description of each species included. This is a work of supererogation, which might have been left out, and, by the further omission of a good deal not strictly germane to the matter, the space saved would have been far more usefully occupied by information as to the county and the birds in their special character as members of the fauna of a limited district; for of these subjects the reader knows as much or as little after having read the book as he did before. For a local work, nothing is more necessary than that local knowledge which a local writer only can sufficiently supply, and a local spirit ought therefore to pervade the whole. The want of this last is very conspicuous in Mr. Smith's volume; and it is a poor compensation that we should have instead a compilation of generalities, however industriously collected. Still, from the author's point of view, no doubt the work is well done; but it is a pity that his acquaintance with the published sources of information is not more extensive, since, in that case, we feel sure he would have found that many of the details he gives us were so commonly known as not to require repetition. We think, too, he might have mentioned the 'Birds of Somersetshire,' begun by Mr. W. D. Crotch in 1851 (though we believe that one part only of that work ever made its appearance), as well as the same gentleman's paper on the oology of the county, contained in the 'Proceedings' of the Somersetshire Archæological and Natural-History Society ("Papers, &c." pp. 149-174). Mr. Smith (p. 628) says he has "been able to enumerate as many as 216 different species as having been found in the county;" but in the 'Proceedings' of the Society just mentioned (p. 27), we find a notice of a communication from Mr. Baker, of Bridgewater, to the effect that "233 [species] have been found in Somersetshire;" a word of explanation, therefore, as to why the larger number was not accepted would have been satisfactory. The most original of Mr. Smith's observations, and the best, are as to the benefits conferred on agriculturists by birds; and we are glad to see that he generally makes out a good case for our favourites.

What is nearly the most central part of the British Islands has hitherto been little, if at all known to ornithologists; Messrs.

Robert Gray and Thomas Anderson therefore deserve our thanks for telling us more about it, as they do in a little work * we have lately received from them. The "Preface" we can cordially recommend as containing just the sort of general information which an ornithologist unacquainted with the district wants, and we much wish we could make room for some extracts. As it is, we can only advise our readers to study it for themselves. A glance at any map of south-western Scotland will show that the position and coast-line of Galloway, Carrick, and Kyle must present great attractions to many birds, though certain species coming from the south are tempted from their straight course by the easterly trending of the Solway, and, following the rivers running into that estuary, are led across the Border counties to reappear on the east coast, whence they continue their voyage northward. Were the authors local faunists of the narrow school, we should, perhaps, be called upon to sympathize with their regrets at these perversions, but being catholic-minded they will no doubt, some day, pursue the truants and tell us how they fare in the shires of Roxburgh, Berwick, Selkirk, and Peebles—a group of counties well worth a monograph. To return, however, to the district with which this book has to do, we may observe that it includes the grand Ailsa Craig, which has been one of the largest nurseries of sea-fowl in the United Kingdom, and would be so again if its lord were not so indifferent to the privilege of possessing a spot of such interest, though, if we are not mistaken, one of the present authors has done his best to convince the noble owner of the short-sighted policy followed by himself and his agents—a policy which, if followed everywhere, would not only extirpate certain species of the birds of Ayrshire in particular, but of the birds of the air in general.

The publication in Europe of a work on the Natural History of two of the States of the American Union seems to be an interference on the part of the Old World with the affairs of the New, of the kind which the celebrated "Monroe Doctrine" was particularly intended to reprobate; yet we are sure that Dr.

* The Birds of Ayrshire and Wigtownshire, by ROBERT GRAY and THOMAS ANDERSON. Glasgow: 1869. 8vo, pp. 62.

Turnbull's 'Birds of East Pennsylvania and New Jersey'* will obtain an impartial reception from our American cousins. In style and treatment of the subject it resembles his 'Birds of East Lothian,' before noticed by us (*Ibis*, 1867, p. 373); but the interest of the present book is increased by the introduction of some vignettes copied from drawings by the great Alexander Wilson, found in his portfolio after his death, and now in the author's possession. We regret that we have not space to dwell longer upon this work, the result of several years' careful observation in a district which, lying between the eastern slopes of the Alleghanies and the Atlantic from Cape May to Sandy Hook, is remarkable for being frequented by a very large number of species (upwards of 340), though most of them use it only as a temporary resting-place on their migrations; but we must call especial attention to the concluding remarks on the "Birds which have disappeared," and we cannot omit from this imperfect notice to praise the care shown by Mr. Robert Gray in editing the book, the more so since that gentleman's modesty suppresses all mention of the fact.

2. GERMAN.

The most important ornithological works published in Germany since our last notices all refer to the avifauna of the eastern part of the Ethiopian region. Dr. Cabanis has laboured at the birds collected by the ill-fated Baron von der Decken during his travels †; Dr. von Heuglin has made good way in the publication of his long-expected 'Ornithology of North-eastern Africa' ‡; and Drs. Hartlaub and Finsch have issued the "Introduction" to their 'Ornithology of East Africa' §, the body of which work

* The Birds of East Pennsylvania and New Jersey, by WILLIAM P. TURNBULL, LL.D. &c. Glasgow: 1869. Roy. 8vo, pp. 62.

† Baron von der Decken's Reisen in Ost-Afrika. Vögel. Bearbeitet von J. CABANIS. Mit 18 Tafeln, nach der Natur gezeichnet von M. Th. von Heuglin. Roy. 8vo, pp. 19-52.

‡ Ornithologie Nordost-Afrika's, der Nilquellen- und Küsten-Gebiete des Rothen Meeres und des nördlichen Somal-Landes von M. TH. VON HEUGLIN. Lieferungen 1-11. Cassel: 1869. Roy. 8vo, 15 pls. and a Map.

§ Ornithologie Ostafrika's. Einleitung. Von G. HARTLAUB und OTTO FINSCH. Roy. 8vo, pp. 27.

is expected soon to appear, and is to form, it would seem (but of this we are not sure), the Fourth Volume of Von der Decken's 'Travels.' It is manifest that with the space now at our command we should be doing positive injustice to the erudition of these four distinguished ornithologists by attempting any off-hand criticisms. We limit ourselves here to recording the consummation, so far, of their labours; and we do this with greater contentment because we have good hope of shortly devoting an article especially to the consideration of them, which we trust will bring the whole subject of the ornithology of these interesting parts of Africa before our readers in a connected form.

It is proverbial that "great events from little causes spring;" and we have an example of the saying's truth now before us. Who would have thought that a direct consequence of the meeting of certain armed men one June day some three years ago in or around a hitherto obscure Bohemian village would be an event so remarkable as the publication of a '*Vogel-Fauna von Norddeutschland*'*? Yet such seems to be the case. The battle of Sadowa established a North-German Confederation, and a necessary product thereof is a book on the birds of the territory of that confederation! Dr. Borggreve appears to have performed his task with the usual conscientiousness of his fellow-countrymen; and his introductory observations (especially those on the interesting subject of the geographical distribution of birds within North-German limits) merit the fullest attention of those who are engaged in European ornithology.

The work of Baron Droste on the birds of the Isle of Borkum†

* *Die Vogel-Fauna von Norddeutschland. Eine kritische Musterung der europäischen Vogel-Arten nach dem Gesichtspunkte ihrer Verbreitung über das nördliche Deutschland. Unter Benutzung der einschlägigen Literatur und nach eigenen Beobachtungen bearbeitet von Dr. BERNARD BORGGREVE. Berlin: 1869. 8vo, pp. 157.*

† *Die Vogelwelt der Nordseeinsel Borkum. Nebst einer vergleichenden Uebersicht der in den südlichen Nordseeländern vorkommenden Vögel von FERD. BARON DROSTE-HÜLSHOFF. Münster: 1869. Roy. 8vo, pp. 389, 16. (Plate and Map.)*

affords ample proof of careful study both at home and abroad. Germany had hitherto scarcely possessed a work giving a really good account of its coast-frequenting species; to supply this want was the author's object, and in its attainment he has been very successful. Though he writes in a popular style, Baron Droste is far more than a mere popular writer; and the result is a volume which is acceptable not only to the sportsman or the ordinary reader, but may be taken up with advantage by the scientific ornithologist. The Baron sets an example which we should like to see followed on every occasion by our own local faunists; for he devotes some fifty or more pages to introductory matter, treating of the topography of the island and the general character of its ornithology at various seasons of the year*, thus fully justifying the expression of the title—"Bird-world." To this succeeds the usual catalogue of the species observed, with notes upon them; and here it becomes plain that the author is diligent to read, mark, learn, and inwardly digest what others have written on the subject. As some of our readers may not be able to put their fingers upon Borkum in the map, we may as well mention that it is one of the line of little islands that stretches along the North-sea coast of Holland and Germany, from the Zuyder Zee to the mouth of the Weser, and is the most westerly of the chain which is German, its near neighbour Rottum being Dutch, though, geographically speaking, it might be more correct to say that both were Frisian.

The old German Ornithologists' Society still survives, notwithstanding the secession a few years since of some of its most active members and the founding of a rival, having its headquarters at Berlin. The old Society had no fixed place of assembly, but led a vagrant life, just as does our British Association; and its seventeenth and latest meeting began at Cassel on the 18th and ended at Münden on the 21st of May last, under the direction of Baron Droste, of whom we have just spoken, as

* Some of this matter has before appeared in the '*Journal für Ornithologie*.'

we learn from the Report* we have received through that gentleman's kindness. His presidency over the Society is by no means an honorary one, two of the most important of the communications, besides several others of less account, made to the meeting having been from him. One of these is on the species of the genus *Numenius*, the author admitting eight as valid—*N. longirostris*, *N. australis*, *N. arquata*, *N. tenuirostris*, *N. minutus*, *N. borealis*, *N. hudsonicus*, and *N. phæopus*. These seem to us to be grouped by him rather artificially, the first four being separated by the colouring of the top of the head, which in them is uniformly spotted, while the rest have two dark unspotted longitudinal stripes divided by a pale and spotted middle space. We think that the character afforded by the buff colouring of the under wing-coverts, and especially of the axillary tuft, which is found in all the American species of the genus, and in them alone, coinciding as it does with the difference of geographical range, would have been a preferable diagnostic. The second of Baron Droste's communications to which we have especially referred is on the representation of bird-life in the most extreme north—the very neighbourhood of the pole. This of course must be a matter chiefly of surmise; and therefore opinions may well differ about it. We do not think it at all follows because a species is *circumpolar* that it is necessarily *polar*, as the author seems to do. Another good paper in the Report is that by Baron von König-Warthaussen on the eggs of species of *Sterna*.

Dr. Seidlitz's pamphlet†, a copy of which we have received, will hardly be appreciated by oologists unless they are far more than mere egg-collectors. It treats of highly interesting subjects, but gets into regions rather more sublime than those where the readers of the 'Ibis' are wont to tread. At any rate the word "Kohlenstofftheorie" carries with it a suggestion of chemical

* Bericht über die XVII. Versammlung der Deutschen Ornithologen-Gesellschaft. Cassel: 1869. 8vo, pp. 66.

† Die Bildungsgesetze der Vogeleier in histologischer und genetischer Beziehung und das Transmutationsgesetz der Organismen von Dr. GEORG SEIDLITZ. Leipzig: 1869. 8vo, pp. 58.

compounds perhaps not more agreeable than the powders with which the author's name will be associated by most of our friends; and accordingly, out of regard to their feelings, we abstain from saying any thing more about this publication, the scope of which can scarcely be said to come within the limits of pure ornithology.

3. FINNISH.

So far as we know, Professor Mäklin has struck out a new idea in proposing to make the capability of flight the basis of a scientific classification of birds*; and though we cannot agree with his suggestion, we fully admit its ingenuity and the pains he has taken in elaborating the notion. It is unquestionably true that this capability is in the highest degree influential on the bird's mode of life, and that it depends on the varying proportion which certain parts of the skeleton bear to each other; but we think that if the principles enunciated were carried out to extremes we should have some results that would contradict the most manifest natural affinities. To take only a couple of cases out of several that could be cited: no one can doubt that *Micropterus* truly belongs to the *Anatidæ*, or *Nestor* to the *Psittaci*; yet while these two forms are nearly or quite involatile, the groups of which they are unquestionably members include a large number of other forms that excel in the power of wing, as witness the Hooded Merganser, whose speed in mid-air is said to defy the best marksmen of North America, and the Macaws with pinions scarcely less powerful. The author's researches and remarks, however, well merit attention; for many of them are highly suggestive, and his plan for expressing algebraically the disposition for a more or less powerful flight is, to say the least, pretty, though we must observe that he omits from his equation any reference to the weight of the body, which, as it appears to us, ought to be included. One of the Professor's suggestions on a quite different subject is not very fortunate: he objects to the name *Pica* as being too much like *Picus*, while, as he rightly remarks, *Cleptes*,

* Vetenskapliga grunder för bestämmandet af fogelarternas ordningsföljd inom släkten och grupper. Af Dr. F. W. MÄKLIN, e. o. professor i zoologi. Helsingfors: 1867. 8vo, pp. 131.

proposed some years since by Dr. Gambel, is preoccupied in entomology ; but the author proposes (pp. 106, 107, notes) in its stead *Gelastes*, which he surely ought to have known was appropriated nearly as long since by Bonaparte to a section of *Laridæ*. If the ancients used *Pica* and *Picus* without danger of confusion, assuredly we moderns may be content to do the same.

Our friend Dr. Malmgren has kindly sent us copies of two ornithological papers published by him during the past year. The first appeared in the 'Öfversigt' of the Finnish Scientific Society's Transactions (vol. xii. no. 1), and relates to the occurrence in Finland of some birds respecting which the author has been so good as to address us a letter which will be found further on. The second is of more general interest, and consists of remarks on the "*Anseridæ*" of Finland and the Scandinavian Peninsula*. Five species of *Anser* and three of *Bernicla* are included, with copious bibliographical references to them ; and, except that we do not exactly see the necessity of elevating the group to the rank of a family, it gives us great pleasure to acquiesce in most of the Doctor's opinions, so that, in American phrase, we can pronounce him to be generally "sound upon the Goose !"

4. ITALIAN.

The great work of Signor Bettoni† has made great progress since we mentioned it (*Ibis*, 1868, p. 106), and has now advanced nearly to the completion of the second volume. The execution of the plates is almost as variable as their size, some being remarkably well drawn, while others we can hardly praise. It is to be regretted that the information contained in this work, a good deal of which is valuable, should not be also published

* Anteckningar om Finlands och Skandinaviska halföns *Anseridæ*. Af AND. JOH. MALMGREN. Helsingfors: 1869. (Separately printed from 'Notiser ur Sällskapet pro Fauna et Flora fennica förhandlingar,' x. pp. 389-401.)

† Storia naturale degli Uccelli che nidificano in Lombardia, ad illustrazione della raccolta ornitologica dei fratelli Ercole ed Ernesto Turati scritta da EUGENIO BETTONI con tavole litografate e colorate prese dal vero da O. Dressler. Tom. i. Fascicoli xvi.-xxvi. Tom. ii. Fascicoli i.-xxiii.

in a form more accessible to naturalists ; for, notwithstanding the liberality of the Counts Turati, these splendid volumes must necessarily be beyond the reach of all but the the most wealthy cultivators of our science, unless they live near some great library. It will be remembered that when we before noticed this work, we remarked on what seemed to us to be a novel statement with regard to *Anthus richardi*. The probable meaning of this has since been explained by our contributor, Mr. Howard Saunders (*Ibis*, 1869, p. 392).

Signor de Betta's Notes and Observations on the appearance of certain birds in Venetia*, though published several years since, have not long reached us. They treat of a most interesting subject and one too much neglected by many ornithologists ; but we should have wished that the author had, according to the title of his Essay, dwelt more on the *causes* which prompt the extraordinary and accidental visits of alien birds. It may, however, be well urged that on this point no one knows much, and it is only by the careful compilation and collection of facts that any of us can ever hope to know more. Regarded in this light the present work is useful, for it brings together records of the occurrence in Northern Italy of birds from almost all points of the compass, and certainly contains a good deal of interesting matter.

The paper by Dr. Salvadori to which allusion has been made above (p. 121) is a very careful revision of the genus *Ceyx*, published in the 'Atti delle Reale Accademia delle Scienze di Torino' (iv. pp. 440-476) and contains much more bibliographical matter than that of Mr. Sharpe (*P. Z. S.* 1868, pp. 587-599), so as to be indeed what it professes, a monograph of the group. As already mentioned the author proposes a new genus *Ceycopsis* (p. 447, note) for the *Dacelo fallax* of Schlegel (*Nederl. Tijdschr. Dierk.* iii. p. 187), which is allied to *Ceyx*, but possesses a small additional (inner) toe—a better reason, we should say,

* Sulla straordinaria od accidentale Comparsa di alcune specie di Uccelli nelle Provincie Venete e sulle cause rispettive Note ed Osservazioni di EDOARDO DE BETTA. Venezia: 1865. 8vo, pp. 32. (Separately printed from 'Atti dell' Istituto Veneto di Scienze,' vol. x. ser 3.)

than can be given for most of the genera founded nowadays. The author recognizes the same number of species (ten) as did Mr. Sharpe, but arrives at this result by a different road. *Ceyx innominata* is proposed as a name for the commonly received *C. rufidorsa*, auctt., the Doctor retaining that name for what may possibly (we think) be the young of *C. tridactyla*; *C. sharpii* is described and figured as a new species from Borneo, while *C. uropygialis* is regarded as identical with *C. lepida*, and *C. philippensis*, Gould, is referred to the genus *Aleyone*. Whether they accept all these alterations or not, ornithologists will readily acknowledge that Dr. Salvadori has executed an admirable monograph.

5. PORTUGUESE.

The highly meritorious 'Jornal de Sciencias' of Lisbon, for August last, contains some Observations on and Additions to Mr. A. C. Smith's "Sketch of the Birds of Portugal" which appeared in our pages (*Ibis*, 1868, pp. 428-460). These are from the pen of Professor du Bocage, whose ready help was duly acknowledged by our contributor, and the Professor now expresses himself in terms of corresponding courtesy with respect to Mr. Smith. The additions to the Portuguese list are forty-four in number, to one of which, a common species in Alemtejo and Algarve, the *Alauda isabellina* of Temminck, the older name of *A. lusitana*, Gmelin, is restored; and the observations relate chiefly to *Aquila heliaca*, for the occurrence of which the author adduces complete evidence. He also remarks on an editorial note of our own (*tom. cit.* p. 435) with regard to this species; and we are much obliged to him for so doing, since it affords us the opportunity of mentioning that the statement therein contained was founded on a misapprehension.

Under the supervision of its able Director, Prof. du Bocage, the publication of a Catalogue of the ornithological collections in the National Museum at Lisbon has been begun, and the portion including the Parrots and Birds-of-Prey has through his kindness reached us*. This seems to have been drawn up by

* Museu Nacional de Lisboa. Secção Zoologica. Catalogo das Collecções Ornithologicas. *Psittaci—Accipitres*. Lisboa: 1869. 8vo, pp. 62.

Sen. José Augusto de Sousa, and is very well done. The condition of this Museum reflects much credit on all who are concerned in its management, since the number of species belonging to the former group contained in it is 204, and of the latter 223, in each case a very large proportion of the described species for any museum to possess. No doubt the still extensive foreign dominions of the Crown of Portugal in some degree explain this great wealth; but the advantage they confer would be undoubtedly lost were there not able and willing spirits at home to aid the collection of the treasures.

6. AUSTRALASIAN.

We have to chronicle the further progress made by Mr. Diggles since we last noticed his work* (Ibis, 1868, p. 348); but it does not seem necessary for us, with our present scarcity of space, to comment particularly upon it, and we will only repeat our best wishes for the success of this enterprising author.

Our antipodes are setting the world a good example. Four scientific societies established in as many provinces of the colony, have incorporated themselves with the New-Zealand Institute, in whose 'Transactions and Proceedings' the various papers communicated to their meetings are published, at a greater or less length, as these contributions seem to deserve. In the first volume (which, through the kindness of a friend there, we have lately received) ornithology makes a more than respectable show. Mr. Walter Buller has some "Notes on Dr. Finsch's review of the Essay on the Ornithology of New Zealand" which it was our privilege first to bring to the notice of our European brethren (Ibis, 1867, p. 132), and, taking his remarks *seriatim*, replies to the criticisms of that learned authority with a considerable degree of success. We can here only mention a few points:—*Hieracidea brunnea* has been found to be the immature stage of *H. novæ-zelandiæ*; further evidence is adduced for the distinctness of *Anthornis auriocula* from *A. melanura*; *Ardea novæ-hollandiæ* has been lately obtained from the North Island, and a remarkably

* The Ornithology of Australia, by SYLVESTER DIGGLES. Brisbane, Queensland. Imp. 4to. Parts xvi.–xx.

small species of Bittern, only seven inches in height, and probably the "Little Bittern" of Mr. Ellman (Zool. p. 7469), has been discovered on the west coast of the South Island; the remarks of Mr. Mackay (Ibis, 1867, pp. 144, 145) on *Notornis mantelli* are said to refer to *Strigops habroptilus*, though it must be mentioned here that that gentleman positively assured us he knew both birds well; a new species of *Ocydromus* from the south-west coast of the South Island is described under the name of *O. nigricans*; the so-called *Mimus carunculatus* (cf. Ibis, 1867, p. 132), subsequently called by Dr. Finsch (J. F. O. 1867, pp. 342, 343) *Anthochara bulleri*, is said to be identical with *A. carunculata*; *Creadion carunculatus* and *C. cinereus* are stated to be totally distinct; and, finally, *Spheniscus undinus* has been procured on the west coast of the province of Wellington. Appended to this paper is a careful translation of Dr. Finsch's review, which appeared in the 'Journal für Ornithologie' for 1867 (pp. 305-347), and further on in the volume is a reprint of Mr. Buller's original 'Essay.' Captain Hutton contributes two lists of the birds of the Great and Little Barrier-Islands, on the latter of which he observed a species of nocturnal habit, but, not being able to obtain an example, he cannot even conjecture what kind of bird it was. Several communications by various other authors treat more or less incidentally of the species of *Dinornis*, and especially of the period at which they existed, concerning which much doubt seems to prevail among those persons in the colony best fitted to form an opinion. Altogether it is most satisfactory to find that, amid the distractions of war, our fellow subjects in New Zealand have time to devote to science.

IX.—Letters, Announcements, &c.

WE have received the following letters, addressed to "To the Editor of 'The Ibis'":—

Agra, June 6*, 1869.

SIR,—'The Ibis,' for April has just come to hand, and it contains several passages in regard to which I wish to offer some remarks.

* [This letter did not reach us until after that of the 12th of the same month, which was printed in our last number.—ED.]

1st. I notice what Dr. Von Heuglin says (Ibis, 1869, p. 133) about the nidification of *Cisticola schænicola*. Pässler appears to me to be very correct in his account. In Upper India, at any rate, this species almost invariably builds "a nest so peculiar that it cannot be confounded with any other." I have myself taken, or seen after they had been taken by my friends Messrs. Brooks, Blewitt, and others, fully fifty nests, and all were, with one exception, of the same type. The bird, which breeds in the rainy season (commonly in August), selects a patch of dense, fine-stemmed grass, from 18 inches to 2 feet in height, and, as a rule, standing in a moist place; in this, at the height of from 6 to 8 inches from the ground, the nest is constructed, the sides of which are formed by the blades and stems of the grass, *in situ*, closely tacked and caught together with cobwebs and very fine silky vegetable fibre. This is done for a length of from 2 to nearly 3 inches, and, as it were, a narrow tube, from 1 to 1·5 inch in diameter, formed in the grass. To this a bottom, as before mentioned, from 4 to 6 inches above the surface of the ground, is added, a few of the blades of the grass being bent across, tacked and woven together with cobwebs and fine vegetable fibre. The whole interior is then closely felted with the silky down of the *Murdar* (*Palotropis hamiltoni*). The nest thus constructed forms a deep and narrow purse, about 3 inches in depth, 1 inch in diameter at top, and 1·5 inch at the broadest part below. The tacking together of the stems of the grass is commonly continued a good deal higher up on one side than on the other; and it is through or between the untacked stems opposite to this that the tiny entrance exists. Of course, above the nest the stems and blades of the grass meeting together completely hide it. The dimensions above given are those of the interior of the nest. Its exterior dimensions cannot be given. The bird tacks together not merely the few stems absolutely necessary to form a side to the nest, but most of the stems all round, decreasing the extent of attachment as they recede from the nest-cavity. It does this, too, very irregularly; on one side of the nest, perhaps, no stem more than an inch distant from the interior surface of the nest will be found in any way bound up in the fabric, while on the opposite side, per-

haps, stems fully 3 inches distant, together with all the intermediate ones, will be found more or less webbed together.

Once only did I find a nest of a different type. This was built amongst the stems of a common prickly labiate marsh-plant which has white and mauve flowers. There was a straggling framework of fine grass, firmly netted together with cob-webs, and a very scanty lining of down.

The nest was egg-shaped, and the aperture on one side near the top. Mr. Brooks, I believe, once obtained a similar one; but all the others, that any of us have ever got, have been of the type first described, which corresponds closely, it seems to me, with Pässler's account. As regards the eggs, all that we get in India belong to one and the same type, which type differs from any of those that Dr. Bree, following Moquin-Tandon, figures. His examples are all perfectly spotless eggs, one pink, another bluish-white, and a third a pretty dark bluish-green. Our eggs, on the contrary, are white, with, when fresh and unblown, a delicate pink hue, due not to the shell itself, but to its contents, which partially shew through it. *Every egg is spotted* (commonly most thickly towards the large end) with, as a rule, exceedingly minute red, reddish-purple, and pale purple specks, thus resembling, though smaller, more glossy, and far less thickly speckled, the eggs of *Franklinia buchanaui*.

These are beyond all question the eggs of our Indian species, and the only type that I have yet met with here; the question of course remains, whether our Indian *Prinia cursitans* (Frankl.) is really identical with the European *C. schænicola* (Bp.). For my part, I believe it to be so; and the apparent extraordinary variability of the eggs in different parts of the world affords ground for serious consideration. The eggs that I have seen were found at different points of a tract of country measuring some six hundred miles from east to west, and three hundred from north to south; but throughout this tract only the one type that I have above described appears to prevail.

Of course even our eggs vary somewhat. Of one nest I wrote at the time I found it:—"The eggs are rather short ovals, slightly pointed at one end, with a white ground, thickly

sprinkled with numerous specks and tiny spots of pale brownish-red; they measured .58 by .46 in."

Of another set of eggs I wrote:—"The ground had a faint pearly tinge, and there was a well-marked, though irregular and ill-defined, zone towards the large end, formed by the agglomeration there of multitudinous specks, which in places were almost confluent."

Of a third set:—"The eggs were much glossier, and had a China-white ground; but instead of a multitude of small specks over the whole surface, they had nearly the whole colouring-matter gathered together at the large end in a cap of bold, almost maroon, red spots, only a very few specks of the same colour being scattered over the rest of the egg."

The eggs of this species measure from .53 to .62 in. in length, and from .45 to .48 in. in breadth; but the average dimensions of a large number measured were .59 by .46 in.

Walking through patches of grass one often disturbs a pair of these little birds, chiefly during the hot weather and the rainy season. The male rises in the air by jerks, each flap of his wings raising him two or three feet; and every flap is accompanied by his feeble song, which consists of a single note. When he has mounted fifty or sixty yards, his little song ceases, and he comes down with a rapid circular rush, to start again on his upward course, singing all the time. He seldom leaves the female for any length of time; and when she is disturbed and flies a short distance dropping suddenly into the grass, he flies above her, hovers for an instant to see that she is all right, and then soars again. After a time he gets tired of singing and of his upward jerking flight, and drops suddenly down into the grass, out of which it is no easy job to drive him before he has had a good rest. The rate at which this tiny bird soars up is really surprising. He mounts more quickly, I think, than any soaring Lark.

2nd. The eggs brought to Capt. Bulger (Ibis, 1869, p. 161) as those of *Eumyias melanops*, certainly never belonged to that bird, whose eggs I proceed to describe:—

In shape they are moderately broad ovals, somewhat compressed towards the smaller end. The ground-colour is

pinky-white, in some entirely devoid of markings, in others with a more or less conspicuous reddish-pink zone or cap of mottled or clouded speckly markings, generally nearly confluent. They have little or no gloss, and obviously belong to the same type as those of *Niltava*. The want of distinctness in the markings separates them from those of *Tchitreia paradisi*, *Dicrurus macrocerus*, and the like. The colouring is a clouded zone or cap, at the best, never defined specks or spots. They vary in length from .75 to .85 in., and in breadth from .57 to .62 in.; but the average of ten measured was .77 by .58 in. I have taken these eggs myself near Simla, and have them from Darjeeling, Almorah, Missourie, and Dhurumsala, so that there is no mistake about the matter.

I may mention that the eggs of *Eumyias albicaudata* do not differ widely from those of the preceding species; they average perhaps somewhat smaller, and are darker and more uniform in colour, being of a dingy buff, more or less mottled throughout (but excessively faintly) with a dusky shade, and clouded with a somewhat deeper shade of the ground-colour at the larger end. They closely resemble the eggs of *Niltava sundara*, but are smaller and paler. As usual in this family, they are dull and glossless.

3rd. Captain Bulger mentions that he procured *Chelidorphynx hypoxantha* on Mount Tongloo. Dr. Jerdon seems to fancy that this is a rare species; in reality it is common in the Turai, the forests of Gurhwab, the Dhoon, warm valleys in the neighbourhood of Missourie, and near Simla, probably, in fact, throughout the sub-Himalayan region, at least as far west as Simla.

4th. Lord Walden is undoubtedly correct in stating (Ibis, 1869, p. 211) that Dr. Stoliczka's *Munia similaris* is the young of *M. undulata*. I pointed this out to Dr. Stoliczka directly I received a copy of his paper. I have specimens of the young with one or two new feathers at one or the other side of the breast assuming the bars of the adult plumage.

I also agree with Lord Walden (*tom.cit.* p. 212) that the doubtful *Hydrobata* is one form of the young of *H. asiatica*. I have a bird answering precisely to Dr. Stoliczka's descrip-

tion, and a complete series, connecting this with the fully adult birds.

As regards *Corvus tibetanus* (*tom.cit.* p.213), unless this is the only species we have in India, it is *not* separable from *C. corax*.

Dr. Jerdon brought down specimens from Thibet, which I have carefully compared with specimens of the Raven so common throughout the Punjab, which breeds as low down as Delhi; and though the Thibet birds were larger than some of those from the Punjab, they were smaller than others.

The Indian Raven, whether of the plains or the hills, is clearly of one species. Individuals in both localities vary a good deal in dimensions, but apparently not more so in one place than another. Whether our Indian Raven is the same as the European bird, or larger, may be decided by a reference to the following dimensions taken from a fine male directly after it was killed:—Length 24·75; expanse 52; wing 17·75; tail 10·5; wings when closed reaching to within ·25 of end of tail; tarsus 2·4; middle toe and claw 2·75; bill from forehead along curve 2·95 inches; weight 2 lbs. 8 oz. I have one or two males slightly larger, several smaller than this; the females run smaller than the males.

I think I was the first to notice that this species bred freely throughout the Punjab. They lay mostly in January, but a few pairs in December, February, and March, building large stick nests in moderate-sized trees, and laying four or five eggs, which vary from 1·72 in. to 2·25 in length, and from 1·2 to 1·37 in width, the average of seventy-two eggs measured being 1·94 by 1·31 inch.

It is by no means remarkable (*cf. loc. cit.*), I think, that *Lanius cristatus* was not observed in the valley of the Sutledge. This species is essentially a Bengal one, and is of extreme rarity, if, indeed, it ever occurs, in the plains of the north-west provinces and the Punjab. All the specimens that I have yet obtained were either from Oude, north of the Goomtee, the Rohilcund Turai, or the Dhoon, or else from the country east of Allahabad.

Westward of the slanting line I have thus indicated, *L. arenarius* replaces it, and in winter this species is abundant in the sandy plains of the Punjab beyond all its congeners.

As regards the Yellow Wagtails (*tom. cit.* p. 214) I do not think that these have as yet been correctly discriminated. We have in India six quasi-species :—(1) *Budytes flavus* (L.); (2) *B. viridis* (Gmel.); (3) *B. cinereocapillus*, Savi; (4) *B. melanocephalus*, Bp.; (5) *B. citreolus* (Pallas), and (6) *B. aureocapillus*, Vieillot. But of these I confess that I should be disposed to regard Nos. 2, 3, and 4 as different stages of the same species. I have fully discussed these various species in the rough notes on Indian ornithology which I hope to find time to print during the present year, and I will therefore here only add that *B. citreolus* (Pallas) measures—length 6 to 6·2; wing 2·86 to barely 3; bill, from front, ·45; tail about 2·75,—thus differing conspicuously in size as well as in other points from *B. aureocapillus*, Vieillot, described, by an oversight, by Dr. Jerdon (*B. Ind.* ii. p. 325) under the name of *citreolus*, of which the dimensions may be taken as—length 7·25; wing 3·2 to 3·4; bill, from front, ·55; tail about 3. The first species is common in Behar in the cold season, and has been sent me from Darjeeling in the hot weather. The latter is the Wagtail so common during the summer in Cashmere.

In regard to *Parus cinereus* (Ibis, 1869, p. 215) I would remark that I have specimens from almost all parts of the Himalayahs, from Etawah and Jhansie in the Doab, and Bundelcund, from Mount Aboo, Goonah, Ahmednugger, and the Neilgherries, all of which appear precisely similar. Whether the Singalese race be really distinct, I am not in a position to decide; but it would be curious if, while the same species extends from Murree to Darjeeling, and from Seharanpoor to Conoor, a different representative species should occur in Ceylon.

5th. The small Flamingo mentioned by Dr. Jerdon (*op. cit.* p. 231) and considered by him to be the *Phænicopterus minor* of Vieillot, is now, owing to the kindness of Major McMahon, in my museum.

The structure of the bill suffices to separate it from any other Flamingo that I have ever seen. This species is very wary. It is found in considerable numbers in the Sambhur Salt Lake, in company with myriads of the common species *P. roseus*, from which its small size and brilliant rosy hue suffice to distinguish

it at any distance. In the Nujjufgurh Jheel, south of Delhi, my friend Mr. R. Blewitt has repeatedly observed single examples.

The specimen referred to by Dr. Jerdon, which I now possess, was brought, with five others (none of which, unfortunately, were preserved), not from the neighbourhood of Delhi, but from the interior of Rajpootana, and probably from the Sambhur Lake, though the *shikarees* refused to tell me where they got them.

6th. The Wheatears which Mr. Brooks showed me (Ibis, 1869, p. 234), of which I have specimens shot at various times between the 25th September and the 5th April, are, I believe, unquestionably *Saxicola saltatrix*, Ménétr., = *S. isabellina*, Rüpp.

There has been some mistake between Mr. Brooks and myself about the *Phylloscopus* with a white wing-lining. The bird he refers to (*tom. cit.* pp. 236, 237) is the species I call *PHYLLOSCOPUS NEGLECTUS*, in regard to which I quote the following remarks from my notes :—"There is a species of *Phylloscopus* very closely allied to, but yet clearly distinct from either *P. tristis* or *P. fuscatus*. This latter has the upper surface a moderately dark dingy olive-brown, and the wing-lining and axillaries a sort of dingy buff or pale rufous. *P. tristis* has the upper parts brown, paler than *P. fuscatus* and with scarcely any olivaceous tinge, and the wing-lining and axillaries pale primrose-yellow.

"The third hitherto unnoticed species, which I call *P. neglectus*, has the upper surface a grey earthy brown (the colour of *Phyllopneuste rama*), and the wing-lining and axillaries white. In dimensions and structure (and in plumage, with the above exception) *P. neglectus* agrees closely with *P. tristis*.

"*P. neglectus* is common in the cold weather in the Punjab, and in the Doab, at least as low down as Agra; but hitherto I have seen no specimens from Central India or the lower Doab."

I have both males and females, according to the tickets of my contributors; but I have never myself ascertained the sexes. I have sometimes thought that these might be the young birds of one or the other of the two above-named species; but with several specimens before me I do not now think that this is the case.

I now venture to send you a description of what is to me a new species. It may be well known to European ornithologists;

but it is new to me. I detected it amongst a number of Himalayan birds, and owe it to the kindness of Major McMahon.

NILTAVA LEUCOTIS, sp. nov.?

Male. *Dimensions*.—Length 6; wing 3·4; tail 2·4; tarsus ·9; bill, from front, ·4 in.

Description.—The forehead, top, and back of the head glistening black; part of the lores, the cheeks, and ear-coverts pure silky white; chin and throat black, more or less glistening, and with more or less of a bluish tinge. A greyish-white half-collar on the nape, not quite extending on either side to the white ear- and cheek-patches. Back and scapulars dull black; a bright patch of glistening smalt-blue at the base of the neck on either side. Rump and upper tail-coverts bright glistening blue; shoulder of the wing, middle tail-feathers, and outer webs of lateral ones deep dull blue; inner webs of the lateral tail-feathers and wing-quills dusky brown, outer webs of quills dusky cyaneous; breast, abdomen, flanks, lower tail-coverts, and wing-lining bright ferruginous; bill apparently horny-black; legs and feet fleshy-brown.

This bird is closely allied to *N. sundara*, but differs in its somewhat smaller size, in the pure glossy black head, greyish-white half-collar, and large, conspicuous, glistening white cheek- and ear-patches. The bill is a trifle longer and the feet are decidedly feebler and smaller than those of *N. sundara*. The single specimen I possess came from the interior of the Himalayas; but the exact locality at which it was obtained is unknown to me.

I may note that the white ear- and cheek-patches, which are the most conspicuous features in this bird's plumage, closely resemble those of *Otocompsa leucotis*; but they are slightly less wide (not projecting downwards so far into the throat) and considerably longer (extending forwards under the eye to the lores).

Let me add a decidedly new species of *Prinia*:—

PRINIA HUMILIS, sp. nov.

Dimensions.—Length 4·75; expanse 5·5; tail 2·25; wing 2, when closed, reaching to within 1·38 of end of tail; bill, from front, ·4; tarsus ·76.

Description.—Head, neck, and upper back pale earthy-brown,

with an olive green shade ; scapulars, lower back, and rump rufous olivaceous-brown ; quills brown, edged with rufous brown ; tail (of twelve feathers) brown faintly rufous, obscurely rayed above—beneath, all but the two middle feathers conspicuously and narrowly tipped with white, and with a broad blackish-brown subterminal band ; lower parts silky fulvous white ; the breast shaded obscurely with dusky, and the flanks, lower abdomen, and tibial feathers distinctly tinged with pale rufous-buff. Legs and feet pale reddish brown ; bill black ; irides pale orange. A very narrow pale line from the nostrils, over the eye, almost meeting on the forehead, which line, very apparent in the freshly killed bird, is hardly traceable in badly preserved skins.

The bill in this species is really much smaller and feebler than that of *P. socialis*, *P. flaviventris*, *P. stewarti*, or *P. gracilis*, and is about the same size as that of *P. hodgsoni*.

This species differs conspicuously from *P. gracilis* in the concolorous back and head and the generally paler and greener tint of the upper parts. I at one time fancied that this might be Dr. Jerdon's *P. adamsi* (B. Ind. ii. p. 170) ; but that has *ten*, while this has always *twelve* tail-feathers.

These little birds are common (climbing and flitting about restlessly in low scrub jungle) throughout the North-west Provinces and the Punjab, in suitable localities. I have never found them in fields or gardens, but always amongst scattered stunted bushes or waste places. The stomachs of all I examined contained tiny ants and almost microscopical beetles.

Yours faithfully,

ALLAN HUME.

Simlah, July 12, 1869.

SIR,—Little, if anything, has hitherto been known of the breeding of the Indian Blackwinged Stilt, *Himantopus candidus**.

High and low I have sought for the eggs of this species without success ; the birds always left the localities in which I had ob-

* Be it understood that I do not of my own authority assert that the Indian race is distinct from the European. Mr. Blyth considered that it was ; and as I have not yet compared the birds, I follow him, until I have opportunities of judging for myself.

served them during the cold season early in May, and I had come to the conclusion that they did not breed with us.

Fancy therefore my delight at finding the other day that they bred in hundreds at the Sooltanpoor salt-works, which are situated in the Goorgaon district, some five and thirty miles south of Delhi.

The birds are seen in small numbers throughout the year, but congregate in great numbers early in May about the works, which consist of brine-wells and many hundred acres of shallow rectangular evaporating-pans, from one to two hundred feet square, and from six to ten inches deep. These pans are merely depressions dug in the soil and lined with *chunam* or fine lime, obtained by burning *kunker*, a nodular concretionary limestone, found in beds near the surface, more or less throughout the plains of upper India. Small strips of ground from one to five or six feet broad, divide the pans; and on the margins of these, or even in the beds of disused pans, where only a little brine ever stands, the Stilts build their nests.

They collect together small pieces of *kunker*, or the broken lime lining of the pans, into a circular platform, from five to seven inches in diameter, and from two to three inches in height; on this again they place a little dry grass, on which they lay usually lay four eggs, but not unfrequently only two or three. They begin to lay towards the end of May; and by the beginning of July numbers of young are to be seen about, and most of the eggs that remain are hard set. The majority of the birds lay during the second week in June.

The temperature of the nests at this time, in the full sun, was probably quite 140°.

The eggs, though slightly smaller, are almost exactly similar to those of the European Stilt figured by Mr. Hewitson; only, as a body, the ground-colour is slightly dingier and less bright than in his figures.

The merit of this discovery belongs to Baboo Kalee Naraiju, one of my officers, who is in charge of these works, and, during the cold season, assured me that this species did breed amongst the salt-pans. He also noticed (and he is perfectly correct) that the eggs, though greatly resembling those of the Red-wattled

Plover (*Lobivanellus goensis*), which breeds there abundantly, can be distinguished from them by :—1st, the nest, the Plover never making any; 2nd, the size, which is slightly smaller, and the shape, which is more attenuated at one end; and, 3rd, by the markings, which are less numerous and more clearly defined. I may add that the eggs of the Stilt, of which we collected nearly one hundred, appear to want entirely those faint inky purple secondary markings so conspicuous in the eggs of most of our Indian Plovers and Terns.

Yours, &c.,

ALLAN HUME.

Shillong, 24th October, 1869.

SIR,—Among other interesting specimens seen by me in Upper Assam was a living specimen of a *Cerionis* which I believe to be *C. temmincki*. It is found in the hill-ranges towards the head of the valley, descending (it is asserted) occasionally to a rather low level. It is called "*Sún-súria*" by the natives, which means the "Golden bird." The specimen subsequently died, and I obtained the skin, which I will describe in a short paper I am preparing on some of the birds of Assam for your journal; but I wish to send this note off at once.

Another still more interesting species, brought alive from the Mishmi hills, is a species of Monaul or *Lophophorus*. When I first saw it, it was in such wretched plumage that, although I considered it to be distinct from the Himalayan species, I was unable to describe it. It is now here at Shillong, on the Khasia hills, alive and in good health, though not in my possession, and, as it has very recently assumed its tail-feathers, I am able to pronounce it decidedly to be distinct from *L. impeyanus*. I have not seen the description of *L. lhuysi*, lately discovered in Northern China, and therefore I cannot speak positively as to its distinctness from that bird; but I will give a brief description of it, which will enable you to say whether it be *L. lhuysi* or no. The crest in this example is entirely wanting; but the feathers of the head are much abraded and the skin injured. The whole upper surface of the head, neck, upper part of the back, and wings is glossy blue-green, wanting (at present) the rich golden and pale green feathers of the hind neck of *L. im-*

peyanus; but a few golden feathers are appearing on the back and sides of the head: the lower back is *greyish-white*, each feather with a *dark central streak*: upper tail-coverts very long and *pure white*: tail reddish-brown (quite different from the rufous-cinnamon of *L. impeyanus*), with a broadish creamy-white tip: lower parts and quills black, the former somewhat glossy: nude skin of the face of great extent and cobalt-blue: bill and legs horny yellow: in size somewhat larger than *L. impeyanus*.

Should this prove to be an undescribed species, I would propose for it the name of *LOPHOPHORUS SCLATERI*, after your predecessor in the editorship of 'The Ibis,' who has done so much towards elucidating the Pheasant-family.

I am, &c.,

T. C. JERDON,

Retired Deputy Inspector-General of Hospitals.

. [We think there can be no question of the bird above described being quite distinct from *L. lhuysi* (the habitat of which, we may mention, appears to be Tibet* and not Northern China, as was at first supposed), since that species has the tail of a green bronze; and as no person can speak more authoritatively on the subject of its distinctness from *L. impeyanus* than Dr. Jerdon, there can be little doubt that *L. sclateri* is a well-marked and good species.—ED.]

Helsingfors, October 29, 1869.

SIR,—It may interest you to know that *Luscinia fluvialis* (Wolf) occurs in the south-eastern part of Finland. Some weeks ago I obtained a specimen of that bird, killed by my friend Dr. L. M. Runeberg, near Borgå, about twenty English miles to the east of Helsingfors, on the 24th of June last. As you know, this species has never before been recorded from Finland or from Scandinavia. Magnus von Wright mentions in his 'Finlands Foglar' (i. p. 140, note) that he had heard at Kyrkslätt and Uskela, near Åbo, some Warblers singing, which he believed to be *Sylvia locustella*. These I imagine must have been *Luscinia fluvialis*.

* Fide Sclater, P. Z. S. 1868, p. 1.

At least three examples of *Erythropus vespertinus* (L.), all old birds, have been obtained during the past summer at Uleåborg and Kajana, lat. 65° and $64^{\circ}5$ N., and several others observed. I believe this species to be a real yet rare inhabitant of Finland. All the specimens procured belong to the true *E. vespertinus*, and not to the *E. amurensis* (Radde) of Gurney (Ibis, 1868, p. 4).

I possess a specimen of *Calamodyta schænobæus* (L.) (*Sylvia phragmitis*, Bechst.) obtained at Uleåborg at the end of July last by Mr. Dahlström. Wilhelm von Wright observed this species at Karesuando, lat. $68^{\circ}5$ N., and Lilljeborg at Tromsø in West Finmark.

I should be obliged by your publishing these notes in the next number of 'The Ibis,' and remain, Sir,

Yours, &c.,

A. J. MALMGREN*.

London, Nov. 15, 1869.

SIR,—I visited Egypt at the beginning of this year, and with my brother made a voyage on the Nile from Cairo to Assouan and back. The trip lasted from the 27th of January till the 10th of April, during which period we made a few notes and collected some specimens, which, from this locality, I believe are new to most ornithologists. On the present occasion I must confine my remarks to *Elanus cæruleus* (Desf.)—*Falco melanopterus*, Daud.

This sociable pretty little Hawk is too well known to require much to be said upon the bird itself. It lives upon insects and mice, and I never observed any other food in the crops of four specimens which I examined. The flight is rather peculiar and varied; at Girgeh, where I first saw a pair playing together, they looked very like the Common Gull. The shortness of the tail detracts, to my mind, much from the elegance of the bird's flight, and gives it an Owl-like appearance, which is somewhat strengthened by the hour at which I saw it on the wing, sometimes hovering over the water late in the evening while I have been watching for Ducks. The irides of this species are exactly the

* [Cf. *suprà*, p. 132.—ED.]

colour of red currants—a fact overlooked by some authors and most taxidermists. We sought carefully for the nest of *Elanus cæruleus*, having often met with the birds in pairs remaining the whole day in certain rows of mimosa-trees which they would not leave; and at length we were rewarded; for on the 28th of March, having seen a bird flying along a row of these trees, we walked up to the spot and presently heard the cry of its mate, which we thus discovered sitting on its nest, placed at the top of a young mimosa about twenty feet from the ground. The nest contained four eggs about the size of a Kestrel's and varying considerably in colour, some being as dark as Kestrels' while others show much of the white ground between the blotches. While we were blowing the eggs under the tree, the bird returned and sat in the nest, repeating the cry which had at first called our attention to it.

On the 30th of March, at Boosh, we found another nest of this bird, situated on the end of a bough at the top of a high mimosa. Owing to the difficulty in reaching it, we unfortunately broke the four eggs it contained. They were hard sat-on, but in colour exactly resembled the nestful we brought back from Egypt.

I am, &c.,

ERNEST SHELLEY.

6th December, 1869.

SIR,—In his 'Birds of South Africa' Mr. Layard identifies the small white-winged Heron of India, *Ardea grayi*, Sykes, with his "no. 586," *A. leucoptera*, Bodd. I have not seen the South-African specimens mentioned by Mr. Layard, but I have recently had the opportunity of examining a small Heron of this group obtained on the Zambesi by Dr. Kirk, and now preserved in the Leyden Museum. Mr. Blyth, who happened to be with me at the time, was so good as to assist me in comparing this specimen with the large series of allied Herons, in which the Leyden collection is exceptionally rich, and we both came to the conclusion that the Zambesi specimen is distinct from the Indian bird, and is identical with the nearly allied but somewhat larger species of Madagascar, *A. idæ*, Hartl. As this identification seems to be an interesting one, I am desirous of putting it on record—es-

pecially as it seems most probable that the species occurring in South Africa would be that found on the Zambesi.

With reference to the opinion formed by Mr. Tristram and myself (*Ibis*, 1869, pp. 437, 438) as to the probable identity of *Butorides atricapilla* (Afzel.) and *B. javanica* (Horsf.), I had also an opportunity of examining at Leyden a considerable series of these two species, and I found that they bore out the distinction mentioned by Prof. Schlegel (*Mus. P.-B. Ardeæ*, p. 43), who, speaking of the latter, says that it is very like the former, "mais d'une taille un peu moins forte, et le devant du cou d'un blanc lavé souvent d'une teinte fauve, mais sans raie rousse." Mr. Tristram has, at my request, reexamined the specimens at Greatham, with a special reference to the "raie rousse," which he informs me he finds to be present in his examples of *B. atricapilla*, but absent in all those of *B. javanica* except in one "summer Chinese specimen which has a *fulvous* line very hard upon rufous." On the whole he is now disposed to agree with me in considering that these two very nearly related forms are rightly treated in the Leyden Museum as specifically distinct, though the difference is certainly very slight.

I may perhaps be allowed to take this opportunity of offering my very best thanks to Prof. Schlegel for the very great kindness and liberality with which, during a four days' visit to the Leyden Museum, he allowed me the full advantage of examining the vast ornithological treasures of that noble collection, and also gave me the valuable aid of his own great experience on many points of ornithological interest respecting which I was desirous of obtaining information.

I am, yours &c.,

J. H. GURNEY.

SIR,—When examining the Wading-birds in the collection of the late Mr. C. J. Andersson, I found a single specimen of *Tringa bairdi*, Coues, labelled "*Tringa* ? sp., male; Walvisch Bay, 24th Oct. 1863." The occurrence in South-west Africa of a little Sandpiper which has hitherto been regarded as restricted to America appears to me of sufficient interest to deserve a record.

The case, it is true, is not without a sort of parallel, at least as regards the *Limicola*; for *Tringa canutus*, *T. subarquata*, and *Calidris arenaria* are found alike in North America and in South Africa; but these three species are all found also in Europe, and might travel from the most northern parts of our continent to the Cape of Good Hope with comparative ease by stages which would admit of rest and food on the way. *T. bairdi*, however, so far as I am aware, has not been recognized in Europe; we may therefore presume that the example procured as above by Mr. Andersson accomplished the entire journey from South America to Walvisch Bay by water—a fact which, considering the distance, seems truly marvellous.

This statement would naturally suggest to the mind of the sceptical a probable mistake in the determination of the specimen; I was therefore unwilling to speak positively on the subject until I had made a careful comparison of it with authentic examples from the New World. The result of my examination has shown me that in point of measurement, form, and relative proportion of bill, feet, and tarsi, as well as in coloration, it differs in no material respect from specimens of *T. bairdi* obtained in the United States and Mexico.

I am, Sir, &c.,

J. EDMUND HARTING.

16th Dec. 1869.

SIR,—I have recently received from Prof. Sundevall a letter containing some remarks on my paper on the genus *Acredula* (*Ibis*, 1868, pp. 295–302); and he informs me that, when adult, the female of *A. caudata* has the head white like the male. I think, therefore, that the most sceptical will not refuse specific rank to the Long-tailed Titmouse of our island, *A. rosea* (Blyth), as compared with the Scandinavian bird. The distinction between the two species must not, however, be considered (as I set forth in my paper) to depend mainly on the statement which Prof. Sundevall has shown to be incorrect, but on the permanent differences when adult, the British bird having a broad black bar from the eye joining the black of the nape, while the whole head of the Scandinavian bird is pure white. I must do Mr. Keulemans the justice of saying that shortly after the publica-

tion of my paper he informed me that the female *A. caudata* obtained a white head when adult, and that he arrived at this conclusion from the dissection of a specimen shot by himself near Leyden, which he forwarded to me. I was then inclined to doubt the truth of the observation; but its correctness is now proved.

Prof. Sundevall further tells me that *Saxicola modesta*, Tristram (Ibis, 1869, p. 206), is identical with *Erithacus schlegeli*, as suggested by Mr. Tristram (*loc. cit.* note) to be possibly the case.

I am, &c.,

11 Hanover Square, London.

R. B. SHARPE.

SIR,—I wish to make a few remarks on that part of Mr. Howard Saunders's paper (Ibis, 1869, pp. 391–397) which relates to Italian ornithology.

Mr. Saunders says (*tom. cit.* p. 396) that *Larus atricilla* is “a regular visitant in winter” in the neighbourhood of Palermo. During a recent visit to Sicily I had the opportunity of examining the specimens which he thought belonged to that species, and I found them to be examples of *L. melanocephalus*, young and in winter dress. If Mr. Saunders had been able to compare them with examples of *L. atricilla*, he would have immediately perceived the difference. I doubt much whether *L. gelastes* is so common on the coasts of Italy as Mr. Saunders says; but certainly the two specimens in the Museum of Palermo determined as belonging to that species are nothing else than examples of *L. ridibundus* in winter dress.

As to the two specimens of *Glaucidium passerinum* said (*loc. cit.*) to exist in the Museum of Catania, I can positively affirm that they are *G. pumilum* from South America, and were most probably from collections sent by members of the imperial family of Brazil to their relatives of the royal family of Naples. I do not remember having seen the *Hirundo cahirica* in the same Museum, and I cannot understand the doubts expressed by Mr. Saunders as to the existence of *Francolinus vulgaris* in Sicily; for specimens of it have recently been received by Prof. Doderlein from Terranova which are actually in the Museum at Palermo.

And now, turning to the Continent, I should wish to have the specimen of *Bubo ascalaphus* mentioned by Mr. Saunders (*tom.*

cit. p. 395) compared with *B. maximus*, to prove that the former has good claim to be included among Italian birds. Concerning the Red Partridges seen in the market of Florence, there is no doubt that they come from Sardinia. Every mail-steamer from that island brings numbers of them to the markets of Naples, Palermo, Leghorn, Genoa, Turin, and elsewhere; I know that many are even sent to Marseilles.

I should like, before concluding, to bring forward the fact that another eastern visitor has made its appearance in Italy for the first time. On a late visit to the Museum at Pisa, Prof. Savi showed me three specimens of *Terekia cinerea* caught all together near that city on the 9th of May last. One of them is now in the Museum of Turin.

I conclude with a remark on exotic ornithology. I should wish to call Mr. Tristram's attention to the possibility of his *Megalophonus anderssoni* being the same as my *M. rufocinnamomeus* from Abyssinia (*Atti Soc. Ital. Sc. Nat.* 1866). Mr. Heuglin has supposed that it may be the same as his *Geocoraphus elegantissimus* (*J. f. O.* 1868, p. 228); but Dr. Finsch, who has lately inspected it, recognizes it as a true *Megalophonus* and quite distinct from any other species previously described.

I remain, Sir, &c.,

Zoological Museum, Turin,
26th December, 1869.

TOMMASO SALVADORI.

London, 28th December, 1869.

SIR,—M. le Père Armand David, of Peking, sent me the enclosed description of a *Parus* which occurs in the neighbourhood of the Chinese capital, together with two examples of the bird itself, and begged me to have his diagnosis inserted in 'The Ibis,' provided that the species turned out a novelty, as he supposed it would. At first glance I pronounced it to be *P. ater*, but on closer examination I find it to have a few of the black crown-feathers lengthened and protruding over the occipital white. By this it can be at once distinguished from the European *P. ater*, L. A similar form, hitherto identified with that species, has been brought from Hakodadi (North Japan). I have examined two specimens of this, and notice that the crest-feathers

are shorter and not very marked. It holds an intermediate position between the European and Pekin birds, but it should perhaps with propriety be associated with the Pekin species. Mr. Blyth considered our present bird referable to the *P. æmodius*, Hodgson, of the Himalayas. Fortunately the British Museum possesses a skin of this, and I had an opportunity of comparison. *P. æmodius* is altogether a smaller and more delicate bird, with a much smaller bill and longer and better-developed crest.

“**PARUS PEKINENSIS.**

“*Proportions.*—Longueur totale, onze centimètres; les ailes pliées vont jusqu’au tiers de la queue, laquelle mesure 4 centimètres.

“Le bec, conique et médiocrement robuste, a six millimètres de long; les tarses quinze; le pouce treize; l’ongle du pouce six millimètres et demi; le doigt médian a douze millimètres et demi.

“*Couleurs.*—Bec noir, plus clair au bout; tarses et doigts bleuâtres ou plombés, de même que les ongles. Iris d’un brun noirâtre.

“*Tête*, ainsi que les côtés du haut du cou, d’un noir lustré, avec trois des quatre plumes allongées de la même couleur, que l’oiseau tient habituellement dressées en forme de huppe. Gorge et bas du cou d’un noir moins pur, qui descend plus bas vers le côtés de la poitrine qu’au milieu. Une tache isolée d’un blanc pur derrière la tête, au haut du cou; joues et côtés du cou de la même couleur. Dos cendré ainsi que les sus-caudales; croupion, côtés et bas de l’abdomen d’un gris plus ou moins olivâtre; bas de la poitrine, milieu du ventre et sous-caudales d’un gris blanchâtre. Pennes caudales d’un brun-grisâtre; pennes alaires d’un brun tirant plus à l’olivâtre et légèrement liserées de gris. Petites couvertures des ailes terminées de blanc et formant deux petites bandes de cette couleur.

“*Historique.*—Cette petite Mésange huppée ne paraît point connue de nos Chinois, qui la confondent avec le *Parus kamtschatkensis* (variété du *P. palustris*). Elle est d’ailleurs peu répandue dans le pays, et je ne l’ai vue à Pékin qu’une

seule fois en cinq ans et demi ; c'est en Janvier 1864. En Décembre 1867, ayant eu occasion d'aller passer quelques jours dans le voisinage des sépultures impériales de Che-san-lin, j'y ai retrouvé ma Mésange huppée parcourant en petites bandes les pins et les thuias, dont elle aime les fruits oléagineux, en compagnie des *Parus minor* et *P. kamtchatkensis*. C'est un oiseau peu gai et plus silencieux que ses congénères ; il semble ne pas connaître le danger, et il est si peu méfiant que quatre individus que je rencontrai occupés à butiner ensemble dans les branches clair-semées d'une pin antique, se sont laissés tirés l'un après l'autre et tuer tous sans chercher à fuir. Bien plus, deux ou trois autres de ces pauvres oiseaux, atteints de plomb trop petit pour les tuer sur le coup, n'ont fait que s'écarter un peu de leur place, à chaque coup de fusil qu'on leur a tiré, jusqu'à ce qu'ils aient été abattus."

Mr. G. R. Gray agrees with me in considering *Parus pekinensis* a very distinct thing. I have therefore no hesitation in forwarding to you for publication my friend Père David's description as that of a good and interesting species belonging to the Coal-Titmouse group.

I am, Sir, yours truly,

ROBERT SWINHOE.

We have great pleasure in announcing the intended publication by Messrs. C. H. T. and G. F. L. Marshall of a monograph of the *Capitonidæ*, which will form a companion work to Mr. Sharpe's '*Alcedinidæ*,' and could not be on a better plan. Those ornithologists who have hitherto failed to appreciate fully the difference between the families *Capitonidæ* and *Bucconidæ* will now perhaps be helped to more correct ideas on the subject.

Though we have succeeded in clearing off a good part of our arrears in the 'Notices of Recent Ornithological Publications,' much yet remains to be disposed of ; but our next number, we hope, will enable us once more to get abreast of the literature of the day, notwithstanding its active state.

THE IBIS.

NEW SERIES.

No. XXII. APRIL 1870.

X.—*Notes relating chiefly to the Birds of India.*

By EDWARD BLYTH, Hon. Mem. As. Soc.

AN examination, last autumn, of the Leyden Museum enabled me to make a number of brief notes, some of which I trust may be useful to students of the ornithology of India. I could not, however, spare the time to draw up descriptions in detail of all the various birds I here mention.

The species and races of GYPS will only be properly understood when adequate series of well-prepared skins of each of them are brought together. I have now seen several stuffed specimens and one fine living adult of *G. kolbii* of South Africa, which Mr. Gurney agrees with me (*Ibis*, 1869, p. 287) in regarding as distinct from *G. fulvus*. The living example is in the Zoological Garden at Antwerp, where it is kept in company with adults of *G. fulvus*. In the hue of its upper parts it resembles *G. indicus* (*verus* = *Vultur tenuirostris*, Hodg.), while the lower parts are white instead of being deep brown as in *G. fulvus*. The head and neck also are much less clad, the black skin showing conspicuously, in which it again resembles *G. indicus*. Of the last-mentioned species I found one stuffed specimen only, in non-adult plumage, in the Leyden Museum, to the specific distinctions of which I called the attention of Professor Schlegel, who is now satisfied of their validity. Whether the Hi-

malayan bird usually referred to *G. fulvus* (the *G. indicus*, Temm., and of Schlegel, *passim*) should not also be regarded as distinct, I will leave to Mr. Gurney to decide ; he at least inclines to the opinion that it should be so recognized. I met him in the Leyden Museum, and examined with him several of the more or less disputed species of Birds of Prey. He called my attention to certain peculiarities of the large Himalayan *Gyps*, especially to its much paler under parts and the striped appearance of the young as compared with the European *G. fulvus* ; but really good and well-prepared specimens, in different stages of plumage, of the Himalayan bird are still much needed to enable us to arrive at a determinate conclusion ; and I may take the opportunity of remarking that a good series of *G. indicus* (*verus*) is also wanted in every European museum that I know. Can it be that both *G. fulvus* and *G. indicus*, apud Temminck, inhabit the Himalayas, and that the latter is the bird which Mr. A. O. Hume has recently distinguished by the name *G. fulvescens* (Ibis, 1869, p. 356) ? In the 'Field' newspaper for October 2nd, 1869 (p. 291), there is a notice (translated from the Russian) of M. Severtsoff's explorations in the Thian Shan range, in the course of which is mentioned "the enormous *Vultur indicus*, measuring 9 ft. 5 in. across the wings." I can only suppose that the Himalayan representative of *Gyps fulvus* must be the bird intended.

ACCIPITER NISOIDES (*A. gularis*, Schleg.) and *A. VIRGATUS* are now considered by Prof. Schlegel to be identical ; but looking carefully over the extensive series of specimens in the Leyden Museum with Mr. Gurney, we arrived at the opinion that they should be kept apart. If *A. nisoides* be only a phase (or rather phases of the two sexes) of *A. virgatus*, why should it not be of common occurrence in India, like the ordinary *A. virgatus* ? which assuredly is not the case. It is even doubtful whether *A. nisoides* occurs in India at all, unless rarely in the Himalaya, whither so many other eastern species extend their range, which do not occur in India southward of the Himalaya. The specimen referred, doubtfully, to *A. nisoides* by Dr. F. Stoliczka (J. A. S. B. 1868, p. 13) should rather be assigned, as it ap-

pears to me, from his description of it, to *A. nisus**; and with regard to his remark that "one of three originals" in the Indian Museum is lost, I beg leave to assure him that there never were more than two examples of *A. nisoides* in the Museum formerly under my charge, the third specimen referred to having belonged to Lord Walden. In the course of my numerous descriptions of birds in the 'Journal of the Asiatic Society' and elsewhere, not a few specimens are noticed that did not belong to the Society.

With respect also to the species of *SPIZAETUS* noticed in the 'Proceedings of the Asiatic Society of Bengal' for August 1868 (p. 195), I may remark that there is no such bird as *Limnaetus alboniger* of Horsfield, and that *Falco caligatus* of Raffles (as can only be determined by his drawing of it in the Library at the India House) is not identical with *Spizaetus alboniger*, nobis, but with *S. limnaetus*, which latter is common to Bengal, Indo-China, the Malayan peninsula, Sumatra, and Java, whereas *S. alboniger* is peculiar to the Malayan countries. The "*Limnaetus*" unnamed (*loc. cit.*) is probably the young of *S. alboniger* (*S. nanus*, Wallace, Ibis, 1868, p. 14, pl. 1). *S. cirrhatus* of the Indian peninsula and also of the Himalaya is likewise found in Java, as before suggested by me (Ibis, 1866, p. 242), being exemplified by one or more Javan specimens in the Leyden Museum, which I have examined with Mr. Gurney.

The nestling *AQUILA PENNATA* (J. A. S. B. 1868, p. 16; *vide* Ibis, 1868, p. 305) is distinctly stated to be "underneath brown, with a large white shoulder-spot." I have always considered this to be the plumage of immaturity, and the white-breasted specimens to be adults (*cf.* Ibis, 1867, p. 183), as likewise in *A. bonelli*, whereas in the *Spizaeti* the white-breasted individuals are in their first plumage. The subcrested form of *Hieraetus*, Kaup, to which all the Indian examples which I obtained (and one near Maulmein) are referable (Ibis, 1866, p. 241), is probably identical with *H. morphnoides*, Gould, which, in Australia, is considered to be a rare species; for I incline to doubt the constancy

* Since writing the above, I find that Herr v. Pelzel is of the same opinion (Ibis, 1868, p. 306).

of the alleged distinction of "the total absence of the white mark on the shoulders," and that of the colour of the cere and feet, which may depend on age.

PERNIS CRISTATUS and **P. APIVORUS**. For a long while past a fine example of the Indian *P. cristatus* has lived in the Zoological Gardens, Regent's Park, at first in company with one, and since with two examples of *P. apivorus*. As in the many that I have seen in India, the former has dark brownish-red irides, whereas the European bird has bright yellow irides. In all the specimens of *P. cristatus* which I remember to have seen from Southern India, Tenasserim, and the Malay countries, the crest is well developed, whereas I never saw it more than rudimentary in Bengal, where the species is tolerably common. A fresh crestless specimen of *P. cristatus* might always, I believe, be readily distinguished from *P. apivorus* by the colour of the irides alone. Burma may be added to the other localities recorded by Mr. Gurney (Ibis, 1868, p. 356) as forming the range of *Circus melanoleucus*.

STRIX INDICA, nobis (Ibis, 1866, p. 250). Numerous specimens from Java in the Leyden Museum, and others (skins) from Australia, referred to *S. delicatula*, Gould, in the British Museum, differ in no respect from the common species of India and Burma, which I suppose must be reinstated as *S. javanica*; while the *S. javanica* of Horsfield (which is figured by Messrs. Gray and Mitchell) is considered by Mr. Gurney, as by Dr. Kaup, to be identical with *S. delicatula* (*vera*). No two species of the genus *Strix* are more distinct than these are, whether from each other or from the European and North-African *S. flammea*.

SCELOSTRIX CANDIDA. In a collection containing several species of mammalia and birds which are peculiar to Burma with Tenasserim, so far as hitherto known*, I found the adult and young of this species, the latter clad with exceedingly long brown fluffy down and presenting a remarkable appearance. I have a very strong suspicion that *Strix pithecopis*, Swinhoe, from China, *S. amauronota*, Cabanis, from the Philippines, and *S.*

* This collection has since passed into Lord Walden's possession.

walleri, Diggles, from Australia, must alike subside to the rank of synonyms of *Scelostrix candida* (*vide anteà*, p. 119).

HUHUA ORIENTALIS. There is a specimen of this bird from Java in the Leyden Museum, which corresponds to *H. pectoralis* of Jerdon; and the latter, therefore, has been rightly assigned by Bonaparte to *H. orientalis*, which must now be included in the fauna of Southern India. *Bubo orientalis minor* of Prof. Schlegel from Banka, is a diminutive of his *B. orientalis*, the former having the wing from 13 to 14 inches long, the latter 15 to 16 inches.

HIRUNDO DAURICA and **H. ERYTHROPYGIA.** Mr. W. E. Brooks tells us (*Ibis*, 1869, p. 46) that "the Himalayan bird is rather larger than that of the plains," or that, "in other words, the hill-bird answers perfectly to the description of *H. daurica*, and the bird of the plains to that of *H. erythropygia*." Dr. Stoliczka, however, remarks (*J. A. S. B.* 1868, p. 17) that "the smaller type, which Blyth considers as distinct from *H. daurica*, Linn., is common all through the Sutlej valley, especially in the portion between Kotegurh and the frontier of Silut." Capt. Beavan gives the length of wing in a Simla specimen as 4.5 in. only, which should indicate the smaller race or species (*Ibis*; 1869, p. 404).

CYPSELUS SUBFURCATUS, nobis, is labelled *C. leucorrhous*, S. Müller, in the Leyden Museum, but is not *C. leucorrhous* (Steph.).

CYPSELUS PACIFICUS and **C. LEUCONYX.** It is quite a mistake on the part of Dr. Stoliczka (*J. A. S. B.* 1868, p. 18) to suppose that these differ only in the colour of their claws. *C. pacificus* is much more robust, with a conspicuously larger foot. It appears to be found throughout the Malay countries; and in the Tenasserim provinces it occurs so high as Maulmein, where I have seen it upon the wing (far beyond the reach of shot), and where Col. Tickell obtained a specimen which he sent to the Asiatic Society. *C. acuticauda*, nobis (considered a dubious species by Dr. Stoliczka), is much more nearly akin to *C. leuconyx* than it is to *C. apus*, but is blacker and has no white band crossing the rump.

MEROPS VIRIDIS (var. *ferrugiceps*). With reference to Capt. Beavan's remark (*Ibis*, 1869, p. 407), I can only say that I concluded that this species was breeding near Maulmein ("so late as the middle of August") from seeing numbers of them resorting to their holes in a high perpendicular bank. In the Burmese collection previously mentioned were several examples of this bird, all of them referable to the variety designated *ferrugiceps* by Mr. Hodgson. In fact the three Asiatic varieties of this species are about as well worthy of separation as is the African variety from either one of them. They are recognizable as local races.

PALÆORNIS ROSA. Some time ago Mr. Gould called my attention to two races confounded under this name, which are evidently distinct; but he was uncertain about their respective habitats. I now find that one inhabits India and the other Burma. The former shows some blue, while the other is totally green, on the inner side of the wing; and the bright colouring of the nape of the male is abruptly defined in the Indian species, but not in the Burmese. Whether the cap of the latter ever obtains so rich a colouring as in the other, when fully adult and in the breeding-season, remains to be ascertained.

The habitat of the green-tailed race (*Ibis*, 1866, p. 353) has yet to be determined; and I have seen no second specimen of it.

PALÆORNIS TORQUATUS and *P. CUBICULARIS*. Mr. W. T. Blanford writes (*J. A. S. B.* 1869, p. 167):—"I have lately shot the African race (*P. cubicularis*, Hasselquist) in northern Abyssinia. The only distinction I can detect from the common Indian *P. torquatus* is that the former bird has a larger bill." The African race is always conspicuously smaller, with a proportionally smaller bill, which is invariably (so far as I have seen) more or less blackish, instead of bright coral-red as in the other; and the roscate nuchal ring of the male is less developed in the African species, being much narrower (almost evanescent) behind or at the nape, where in *P. torquatus* it is broadest. There is also much less of the greyish or dusty appearance about the plumage of the male bird. The two species may generally be seen in cages next to each other in the Parrot-house in the

Regent's Park, a pair of each of them, as at the present time. Which of them, if either, it is that visits Syria, where it is recorded ('Journal of the Euphrates Expedition,' i. pp. 443, 537) as "abounding in the spring," remains to be ascertained.

PALÆORNIS JAVANICUS and *P. VIBRISCA*. These only differ in the Javan bird having a red lower mandible, while the other has a black one; but in some Javan specimens the lower mandible is blackish, and Mr. Gould has a specimen from Siam with a red under mandible: the Hainan birds have it black (*antèa*, p. 93).

PICUS WAGLERI, Hartlaub. A specimen thus labelled, from the "Himalaya," in the Amsterdam Museum is like *P. macæi*, but larger, with the median six rectrices black as in *P. atratus*; wing 4.625 in. *P. wagleri*, Hartl., is identified with *P. macæi* by Malherbe, who describes and figures a Brazilian species under that name. If he be right, the species at Amsterdam may bear the title of *P. WESTERMANI*, nobis. The Tenasserim *P. atratus* is also larger than *P. macæi*, or 8 inches in total length, notwithstanding that Capt. Beavan (*Ibis*, 1869, p. 413) places a mark of doubt to this! The species which he describes (*loc. cit.*) is *Yungipicus canicapillus*, nobis, barely distinguishable from *Y. sondaicus*, of the Malayan peninsula (*Ibis*, 1866, p. 354).

CHRYSOCOLAPTES STRICTUS. Of three figures assigned to this species by Malherbe, the supposed female seems to be that of *C. delesserti*, while the lowest figure in his plate represents the female of *C. strictus*, having the yellow cap as before mentioned by me (*Ibis*, 1866, p. 355).

MUELLERIPICUS FEDDENI, Blanford (*J. A. S. B.* xxxii. p. 75, 1863), is *Thriponax jerdoni*, Cab. & Heine (*Mus. Hein.* ii. p. 105, note, 15 July, 1863).

GEVINUS VIRIDANUS, nobis, common in the Tenasserim provinces, has been identified with *G. dimidiatus* of Sumatra and Java; and there is in the Leyden Museum a specimen of the Indian *G. striolatus*, nobis, marked from Java, which I cannot help suspecting must be a mistake.

After carefully looking over the extensive collection of Cucu-

LIDÆ in the Leyden Museum, I found nothing to alter my opinion regarding the various oriental species, expressed in 'The Ibis' for 1866 (pp. 359 *et seq.*). But I may mention that the Javan *Surniculus* (or *Polyphasia*) resembles that of Bengal, Tenasserim, and Pinang, as distinguished from the smaller *S. merulinus* of Malacca.

ARACHNOTHERA AURATA, nobis (J. A. S. B. xxiv. p. 478). In the collection of Burmese birds before mentioned I noticed two examples of this species, which previously I only knew from the single specimen originally described.

UPUPE EPOPS. It is remarked by Herr von Pelzeln (Ibis, 1868, p. 307) that "all Asiatic specimens, more especially on the back, are of a greyer hue"—that is, than European examples of the Hoopoe. The Burmese Hoopoes, however, are considerably more rufous above than those either of Bengal or of Europe; and Dr. Jerdon even separates them by the name *U. longirostris* (*cf.* Ibis, 1866, p. 366), which does not appear to be an appropriate appellation.

LANIUS NIGRICEPS is marked *L. pileatus* in the Leyden Museum, where also there are specimens of the *L. cristatus*-type from Amurland just like the Bengal species, and others from Bornco and Ceylon, which are absolutely undistinguishable from some received from China! likewise many examples from Java of *L. superciliosus* and *L. magnirostris*, which Lord Walden has already noticed as inhabiting that island (Ibis, 1869, p. 242).

TCHITREA PARADISI, *apud* Stoliczka, Von Pelzeln, and Brooks (J. A. S. B. 1868, p. 26, Ibis, 1868, p. 314, and 1869, p. 49). Should not this rather be *T. affinis*? which is the only one that I have ever seen in Himalayan collections.

DRYMOPHILA LIMBATA, Temm., from Java and Timor, is a *Philentoma*, like *P. velatum*, but larger. Leyden Museum.

CYANOPTILA CYANOMELANURA. A specimen of this Japanese bird in the Leyden Museum is labelled as coming from Nipâl, which must needs be a mistake*. There is likewise one example

* I also found there a female of *Sialia arctica* marked from Nipâl!

of probably a female in quasi-masculine attire, from Japan, having the throat, breast, and ear-coverts, which are black in the mature male of *C. cyanomelanura*, of a dull whitish colour, while the back is strongly tinged with verditer. It is figured as the ordinary female of the species in the 'Fauna Japonica' (*Aves*, pl. xvii.).

CYORNIS CYANOPOLIA (Boie), from Sumatra, Java, and Borneo, differs in no respect that I can perceive, whether from recollection or comparison with Dr. Jerdon's description, from *C. unicolor*, nobis, of the Sikhim Himalaya. The female (*Muscicapa infuscata*, Müller) is rufous-brown above, darker upon the crown, and brighter on the tail; lower parts pure white, except the sides of the breast, which are coloured like the back. Wing 3.125 in.

CYORNIS BECCARIANA, Salvadori. One of two Bornean species of this genus, which were undescribed when I first took notes of them in 1868, I now identify as above. It differs from *C. elegans* (*rubeculoides*) in having the whole throat to the ear-coverts rufous-white; forehead, over the eye, shoulder of wing, and upper tail-coverts of a more lazuline blue than in *C. elegans*, and the breast is less deeply tinged with rufous; legs pale; wing 2.75 in.

CYORNIS SIMPLEX, sp. n.

This species is distinguished by its conspicuous white lores; throat pale ferruginous, which colour extends nearly (but not quite) to the ear-coverts; upper parts duller blue than in the others, with no bright blue on the forehead and over the eye, or on the upper tail-coverts, and little more than an indication of brighter colouring on the shoulder of the wing; breast rather bright ferruginous; flanks tinged with the same; legs brown; wing 2.75 in. The presumed female is wholly ferruginous-brown, very bright ferruginous on tail; the lower parts paler, whitish on throat and middle of belly; orbital feathers whitish. Wing 2.625 in. *C. rufifrons*, Wallace, is a fourth species of this genus inhabiting Borneo.

Of *C. ruficauda* it is remarked by Dr. Stoliczka (J. A. S. B. 1868, p. 29) that the "male and female do not differ in colouring, except that the breast is somewhat more albescent in the

latter"—that is, that both sexes have a colouring corresponding to the ordinary feminine garb in this genus. In a female of *C. tickellie* obtained by Mr. Blanford (J. A. S. B. 1869, p. 174) "the plumage was precisely similar to that of the male"—that is, the ordinary masculine garb of the genus. I cannot help suspecting that the latter case was exceptional in the species, as with a female Redstart (*Ruticilla phæniceus*) I obtained last spring, and now in the collection of my friend Mr. Bond; but this I should describe as exhibiting a quasi-masculine phase of plumage.

MUSCICAPA MUELLERI, Temm., from Sumatra and Borneo, is very like *M. mugimaki* of Java as well as of Japan; and my *Erythrosterna erythaca* from Pinang is probably the female of the former rather than of the latter (as assigned by Mr. Swinhoe).

ERYTHROSTERNA LEUCURA. In the opinion of Herr von Pelzeln, this bird is not distinct from *E. parva* (Ibis, 1868, p. 316). But Mr. W. T. Blanford remarks of *E. parva* (J. A. S. B. 1869, p. 174) that it is "common about Nagpur. I did not," he adds, "obtain a single specimen of *E. leucura*, which is probably only found in Bengal and Orissa, like some other migratory birds. [I observed it to be an exceedingly common winter visitant in the neighbourhood of Akyab.] In *E. parva* the buff feathers round the orbits are peculiarly conspicuous. Males shot so early as the end of November had the red breast; so that, except in birds of the year, I doubt if the male ever has the plumage of the female." The male of *E. leucura* seems always to have a trace of rufous or ferruginous about the chin, by which it may be distinguished from the other sex; but the well-defined ferruginous gular mark (never spreading upon the breast as in the other) does not make its appearance till late in the spring, immediately prior to their departure from the vicinity of Calcutta. It is a particularly abundant species, of which specimens were brought to me continually, with others, throughout the season; and I never saw one having the gular mark except late in the spring, nor a specimen that was intermediate in the extension of this rufous. I therefore hold with Mr. Blanford, that *E. leucura* should be recognized separately from *E. parva*.

PRATINCOLA RUBICOLA (Ibis, 1868, p. 309; 1869, p. 53). It is very possible that this bird may occur in the higher Himalaya, and yet be distinct from *P. indica* of the lower elevations and of the plains. The difference of the note in the instance of the race which visits Lower Bengal in the cold season was at once recognized by me, and influenced me when I proposed its separation from *P. rubicola*. In European examples (so far as I have seen) the ferruginous colouring of the lower parts is always much more developed than in specimens procured in Bengal or elsewhere on the plains of India; but Dr. Bettoni's figure of a Lombard (?) specimen (Ucc. Lomb. tav. 66) is a better representation of the ordinary *P. indica* than is that of Mr. Gould (B. As. pt. xv.).

SAXICOLA LEUCURA and S. OPISTHOLEUCA (not *leucuroides*) of India (Ibis, 1869, p. 234). Mr. Hume may rest assured that the two birds here mentioned are distinct not only in species but in genus, the first being a true *Dromolæa*, and therefore much more robust in form than the other. Both species should be in the Calcutta Museum.

LARVIVORA CYANA and IANTHIA CYANURA (J. A. S. B. 1868, p. 310, and Ibis, 1868, p. 310) should now stand as *L. superciliaris* (Jerdon), and *I. rufilata* (Hodgson) (Ibis, 1867, p. 16). The Japanese *Lusciola komadori*, Schlegel, seems to be allied to *Larvivora*, and is decidedly not a true Robin.

MYIOTHERA LEUCOPHRYS, Temm., is a true *Brachypteryx*. There are three specimens in female plumage in the Leyden Museum.

TESIA SUPERCILIARIS and MICRURA SQUAMATA, from Java, are in the Leyden Museum. The latter is doubtfully identical with *M.* or *Pnoepyga squamata (vera)* of the Himalaya.

TURDUS PALLENS, Pallas, is *T. rufulus*, Drapiez, *T. modestus*, Eyton, beside having other synonyms.

"GEOCICHLA MUTABILIS, S. Müller?" sp. n. (Leyden Museum.) Adult slaty, with white supercilium, white vent and tips to lower tail-coverts. Java.

ACROCEPHALUS AGRICOLUS, Jerdon, is identical (so far as I

can perceive) with the European *A. palustris*, inappropriately so denominated.

LOCUSTELLA CERTHIOLA, from Eastern Siberia, in the Leyden Museum is like *L. naevia*, but larger, with a much larger bill. Very decidedly not the Indian species as supposed by Dr. Jerdon.

L. LANCEOLATA, from Southern Russia, in the Leyden Museum is like *L. naevia*, but with the breast and flanks very much spotted.

SYLVIA ARALENSIS, from Kokan, in the Leyden Museum is like *Phyllopneuste rama*, but with white outer rectrices, the outermost wholly white, the next with white outer web.

S. BOREALIS, Blasius, from Java, Borneo, Philippines, and Ceylon is *Phylloscopus magnirostris*, nobis. Leyden Museum.

PHYLLOSCOPUS RUFUS. If Mr. W. E. Brooks obtained this European species near Almorah (Ibis, 1869, pp. 56, 236, and 354), he must still not conclude it to be identical with *P. tristis*, nobis; for the two are conspicuously distinct, and there should be a good series of both of them in the Calcutta Museum. The question rather is, whether *P. tristis* should be considered identical with *P. brevirostris*, Strickland (*vide* Ibis, 1867, p. 25). Herr v. Pelzeln, who is doubtless well acquainted with *P. rufus*, admits *P. tristis* (Ibis, 1868, p. 308); and I can only suppose that the veritable *P. tristis* was unknown to Mr. Brooks.

P. AFFINIS, Tickell. Again I cannot at all understand Dr. Stoliczka, when he asserts that *P. affinis* "is exceedingly like the European *P. sibilatrix* and perhaps identical with it" (J. A. S. B. 1868, p. 46). No two species of the genus are more unlike each other; and the only Indian *Phylloscopus* known to me that could well be mistaken for *P. sibilatrix* (though still exceedingly well distinguished) is *P. nitidus*. Herr v. Pelzeln only admits *P. tristis* and *P. affinis* in his catalogue of Dr. Stoliczka's specimens.

Of *REGULUS HIMALAYENSIS*, which Herr v. Pelzeln identifies with *R. cristatus*, I only saw one specimen, which I believe was procured near Simla, and it should be now in the

Calcutta Museum. It was considerably larger in its dimensions than any one of several European examples of *R. cristatus* which I had for comparison ; and Mr. Gould independently separated the Himalayan bird for the same reason. Dr. Stoliczka gives some details concerning its range of distribution north of India (J. A. S. B. 1868, p. 47*).

"SYLVIA [REGULOIDES ?] LEUCORRHOA, S. Müller," in the Leyden Museum, from Java, is *Pycnosphrys grammiceps*, Strickl. (Contr. Orn. 1849, p. 124, pl. 34. fig. 1). (Cf. Ibis, 1867, p. 28.)

"ABRORNIS SCHWANERI (Temm.)," sp. nondescr. Dull ruddy-green above, yellow below ; crown and ear-coverts dusky ; throat and front of neck dull whitish ; a slight pale supercilium ; rictal bristles conspicuous ; tail somewhat ruddy ; wing 2·25 in. *Hab.* "Borneo." Leyden Museum.

"A. ATRICAPILLA, Temm.," sp. nondescr. Yellowish green above, yellowish on the forehead, cheeks, and underparts ; the whole vertex black. *Hab.* "China" †. Leyden Museum.

* In races which differ only in size, some are remarkably constant (so far as known as yet), e. g. *Pratincola bicolor* and *P. caprata*, *Hemicercus canente* and *H. cordatus*. In *Pyrrhula vulgaris* the size is always small in the British Islands, and large (*P. coccinea*) in Scandinavia ; while in the German birds sold commonly in the London shops I have remarked much difference of size, and I suspect (from what I have seen of them) that a gradation from that of the Scandinavian to that of the British Bullfinch might be obtained. The assumed diversity of *Fregilus himalayanus* from *F. graculus* has been disproved by Herr v. Pelzeln (Ibis, 1869, p. 317) ; and exceptionally large specimens of *Corvus corax* would seem to occur now and then in Europe as well as in Tibet, which is adverse to the admission of *C. tibetanus* as a permanent and distinct race, as I presume also to that of *C. maximus* (Ibis, 1869, p. 393 ; vide Stoliczka, J. A. S. B. 1868, p. 54, note, and Layard, Ibis, 1868, pp. 246, 247).

† The two following species in the Leyden Museum are akin to *Phylloscopus* ; but it was getting dark when I noted them, and I neglected to examine them afterwards :—

"SYLVIA PRESBYTES, S. Müll.," sp. n. Dusky green above, with dusky cap, and conspicuous whitish supercilia ; three outer tail-feathers more or less completely white in different specimens ; throat and front of neck whitish, the rest of the lower parts tinged with yellow. *Hab.* "Timor."

"S. VIRESCENS, S. Müll.," sp. n. Dull greenish-brown above, whitish below ; tail somewhat ruddy ; bill rather short, wing 2 in. *Hab.* "New Guinea."

NEORNIS MONTANA? (Horsfield) (*vide* Ibis, 1867, p. 22); *Sylvia vulcania*, S. Müller. Wholly dark brown, paler below, whitish on throat and along middle of lower parts; a slight pale supercilia; wing 2·5 in.; tail 2·75 in., much cuneated. *Hab.* "Java and Timor." Leyden Museum.

"SYLVIA GRACILIOIDES, Temm.", received from Andalusia, is very doubtfully separable from *Burnesia gracilis* (*Prinia gracilis*, Rüppell). Leyden Museum.

CISTICOLA DELICATULA from Java requires comparing with *C. erythrocephala*, Jerdon, of India. Leyden Museum.

MYIOTHERA CAPISTRATA from Borneo, and *M. capistratoides* from Sumatra. The latter identical with *Goldana nigrocapitata* (Eyton), and the former probably with *G. capistratoides*, Strickland (Contr. Orn. 1849, p. 128, pl. 36). Leyden Museum.

NAPOTHERA CORONATA=*Trichostoma rostratum*?; *N. pileata* = *T. magnum*; *N. rubicauda* = *T. ferruginosum*; *N. lepidoccephala*, another of the same genus. Leyden Museum. (*Vide* Ibis, 1865, p. 47.)

MIXORNIS, Hodgson. The species inhabiting India, Burma, Malacca, and Sumatra (*M. rubricapillus*), is marked *Timalia sumatrana*, the kindred Javan race (*T. gularis*, Horsfield) being larger. Leyden Museum.

STACHYRHIS, Hodgson. *Timalia larvata*, S. Müll. (Bp. Consp. Av. i. p. 217) of Sumatra, appertains to this very distinct genus, and is nearly akin to *S. nigriceps*, Hodgson. Leyden Museum.

The species of TURDINUS are referred at Leyden to *Myiothera*. *M. lepidopleura* = *T. macrodactylus* (Strickland), with Java as one habitat; *M. epilepidota* is also from Java, *M. loricata* from Sumatra, *M. atrogularis* from Borneo, and *M. murina* from New Guinea. (These names require some reconciling with those in the India-House Museum, *vide* Ibis, 1865, p. 47).

TRICHOPHORUS BRUNNESCENS = *Iole olivacea*. Leyden Museum.

LOPHOPHANES DICHROUS must be the species meant by Dr. Adams (P. Z. S. 1859, p. 176), about which I have hitherto been doubtful (Ibis, 1867, p. 34).

IXUS INORNATUS = *I. brunneus* et *I. plumosus* (nec *I. simplex*).
Leyden Museum.

ORIOLOUS CHINENSIS : 27 specimens from Java, Borneo, China, and elsewhere. Not any that could be referred to *O. hippocrepis* or to *O. tenuirostris* ! *O. phaiocomus* is a remarkably coloured Oriole from Gilolo, which is wholly blackish. Leyden Museum.

COCHOA, Hodgson = *Oreas*, Temm., as exemplified by *O. azurea* (*Pteruthius azureus*, Temm., Pl. Col. 274), which I assigned rightly from the figure of it cited (*Ibis*, 1867, p. 32). It is interesting to find a Javan representative of this particularly remarkable Asiatic form.

GARRULAX RUBIGINOSUS, nobis (*Ibis*, 1865, p. 46), proves to be a West-African bird, which in Leyden is marked *Crateropus atripennis*, Swainson (*Phyllanthus capucinus*, Lesson); and the allied *G. poliocephalus*, nobis (*loc. cit.*), may also, therefore, be African. There is, however, a Sumatran *G. poliocephalus* (Temm.)—rufous-brown, with grey head, throat, and front of neck; lores and chin black; the bill and feet pale. Leyden Museum*.

CORVUS MACRORHYNCHUS, Temm. = *C. culminatus*, Sykes.

CORVUS VALIDUS, Schlegel = *C. tenuirostris*, Moore Wing 12 to 12.5 in. *Hab.* Malacca, Sumatra.

CORVUS ENCA, Horsfield. Wing 11 to 12 in. *Hab.* Java.

CORVUS VALIDISSIMUS, Schlegel. Wing 12 to 13 in.; beak immense. Batchian and elsewhere. This and the two last mentioned form three races, differing only in size. Leyden Museum.

UROCISSA CUCULLATA, *apud* Beavan (*Ibis*, 1868, p. 169). Obviously *U. flavirostris*, nobis, as distinguished from *U. cucullata*, Gould.

DONACOLA ATRICAPILLA (Leyden Museum) = *Munia rubro-nigra*, Hodgson. Bornean specimens are similar to Indian, with belly and lower tail-coverts black; in the Sumatran this black is almost obsolete; and in those from Macassar the black be-

* In '*Ibis*,' 1868, p. 249, line 20, for "albescent," read "allied."

neath is well developed, while that of the head and neck is much imbrowned. It is quite arbitrary where to draw the line as to what are to be considered species, races, or varieties, in the genus *Munia*, at least in not a few instances.

MUNIA. The specific name *punctularia* is assigned at Leyden to the Indian race, *M. undulata* (Latham), with golden-fulvous upper tail-coverts, and *nisoria*, Temm., to the Malayan race with greyish upper tail-coverts. A third race, from Celebes, has no pale shafts to the feathers of the upper parts, being otherwise like that of India.

M. CHRYSURA, from Borneo, = *M. leucogastra*, nobis, from Malacca.

M. ACUTICAUDA, Hodgson, is marked "*M. muscadina*, s.n.", from Sumatra. Leyden Museum.

TO PASSER FLAVEOLUS, nobis (J. A. S. B. xiii. p. 946), from Burma, should be referred *Pyrgita jugifera*, Temm. (Bonap., Consp. Av. i. p. 508), labelled as from the Philippines, a habitat which I cannot help thinking should be regarded as dubious for the present. There is only a single male specimen of it in the Leyden Museum.

TO PASSER DENTATUS (Sundevall?) (Bonap., Consp. Av. i. p. 513) add *P. canicapillus*, nobis (Ibis, 1865, p. 46), as a synonym.

LINOTA FRINGILLIROSTRIS, Bonap. (Consp. Av. i. p. 539), in Leyden Museum, marked as from Nipâl. Decidedly a common Linnet (*L. cannabina*), and the alleged habitat extremely doubtful.

According to Dr. Jerdon, EUSPIZA AUREOLA and EMBERIZA RUTILA "appear to be the only Buntings found in Burmah." In the Burmese collection before mentioned, I observed at least one example of *Melophus melanicterus*.

OTOCORYS PENICILLATA (Ibis, 1868, p. 319). Qu. *O. longirostris* (cf. Ibis, 1867, p. 47)?

BUDYTES CITREOLUS, from Russia and Siberia (in Leyden Museum) = *B. calcaratus*, Hodgson (whether or not *B. citreolus*

of Gould's 'Birds of Europe'). An example of this bird in full summer dress, with the black back, obtained in the district of Mymensing by my late friend Mr. R. W. G. Frith, was presented to the Asiatic Society not long after my arrival in India; so that I have long been acquainted with it in all its phases of plumage.

B. RAYI, Bonap. (Ibis, 1868, p. 312). In all probability the young bird noticed should rather have been referred to *B. viridis* (v. *cinereocapillus*).

OSMOTRERON, from Sumatra. Like *O. malabarica*, but with grey cap and cheeks, no breast-patch and chocolate-coloured lower tail-coverts in the male. One of several closely allied races. Leyden Museum.

CARPOPHAGA INSIGNIS has on the average the wing 1 inch or 1.5 in. longer, but is otherwise very similar to *C. lacernulata* of Sumatra and Java, which sometimes has a distinct grey cap. *C. badia* and *C. insignis* seem to be the same, but the former is rather brighter in colouring, *C. lacernulata* being a little smaller.

CARPOPHAGA ROSACEA, from Timor, hardly differs from *C. aenea* and *C. sylvatica*, if these can be fairly separated. Of *C. pusilla*, nobis, I remarked four specimens from Travancore and Ceylon in the Leyden Museum.

COLUMBA VITICENSIS, Peale, from the Fiji Islands, is a true *Palumbus*.

MACROPYGIA LEPTOGRAMMICA, referred to by Dr. Jerdon in his notice of *M. tusalia* (B. Ind. no. 791), is not an inhabitant of Java, but of Celebes.

TURTUR MEENA (Ibis, 1868, pp. 203, 320). Qu. *T. rupicolus*? (cf. Ibis, 1867, p. 47, 1868, p. 355).

"COLUMBA TURTUR," from the Philippines (in Leyden Museum), is like *Turtur auritus*, but darker, the black predominating on the upper parts; lower tail-coverts white.

TURTUR LUGENS, of Abyssinia, is like *T. auritus*, but much darker, with no white margins to the neck-patch; dark ashy belly and lower tail-coverts.

PUCRASIA MACROLOPHA is figured with the sincipital tufts as

I have described them (Ibis, 1865, p. 28, note) in the 'Bengal Sporting Magazine' for 1836, p. 100.

EUPLOCAMUS PYRRHONOTUS, Selater, = *Phasianus personatus*, Temm. MS., in Leyden Museum; female distinguished from that of *E. erythrophthalmus* by the brown colouring of its throat.

ARBORICOLA GINGICA (*Perdix gingica*, Latham, Temm. Gall. v. 3, p. 410). Upper parts as in *P. rufogularis*, nobis, but the head browner, with a broad white supercilium spotted with black; throat and sides of the neck pale ferruginous, with elongate black spots, not transversely oval as in *A. rufogularis*; lower part of the front of the neck black, forming a triangular patch, which is bordered below with a white semicircle, and this by a broader semicircle of a deep maroon colour; lower parts ashy, passing to white on the middle of the belly, the feathers on the flanks being margined laterally with ferruginous; wing 5 in. *Hab.* — ? marked "Coromandel."

The following species of *Arboricola* are represented in the Leyden Museum:—1. *A. javanica*, from Java and Sumatra. 2. *A. personata*, from Java. 3. *A. atrogularis*. *Hab.* Sylhet and Assám. 4. *A. torqueola* (*megapodia*, Temm.), from the Himalaya. 5. *A. rufogularis*. *Hab.* East Himalaya and Tenasserim. 6. *A. gingica*. *Hab.* — ? (Philippines?). 7. *A. charltoni*, Eyton (*pyrrhogaster*, Reich.), Pinang. A bird of this genus on the Coromandel coast could not possibly have escaped the attention of naturalists and sportsmen in the Madras Presidency (*cf.* Ibis, 1867, p. 161).

With regard to the remark of Capt Beavan (Ibis, 1868, p. 385) respecting the habits of *Arboricola torqueola* and *A. rufogularis*, I must refer the reader to Dr. Stoliczka's observations (J. A. S. B. 1868, p. 69). According to him, *A. torqueola* "is very solitary in its habits, and during the summer it is generally met with only near the limit of trees, or near the snows; it comes down to Kotegurh, Simla, and other places merely in winter; as soon as the snow begins to melt on the higher ranges, it immediately retires to the interior." Capt. Beavan does not mention the season at which he saw *Arboricola* in coveys. I saw them rise solitarily in the Tenasserim provinces during the

height of the cold season, but in places where it was hopeless to think of knocking one over, or of picking it up if brought down—on steep bamboo-clad hill-sides, with a few exogenous trees sprinkled everywhere—localities where *Pitta cyanea* showed occasionally, easily recognizable by its colouring, even at a sudden momentary glance.

CHETUSIA CINEREA, nobis (1842), from Bengal and Burma, is a much larger species than *C. innotata*, Temminck & Schlegel (1850), of Japan, with which it has been erroneously identified, though quite similar in colouring. *C. spixi*, from Africa, is intermediate in size, with the black upon the tail more developed. Length of closed wing in *C. cinerea* 9·75 in., in *C. innotata*, 8 in.; of tarsus respectively 3·25 and 2·85 in.; bill from forehead 1·5 and 1·25 in. The coloured figure of *C. innotata* in the 'Fauna Japonica' is misnamed *melanoleuca*; and in the description (p. 107) the allied Indian species is described as to be distinguished "par une taille beaucoup plus forte."

SARCIOPHORUS BILOBUS has the crown black at the breeding-season, brown in winter (this in reference to Capt. Beavan's remarks, *Ibis*, 1868, p. 391).

CHARADRIUS INDICUS, *apud* Schlegel. From Nipâl (Hodgson). A single specimen at Leyden, which would appear to have about the same claim to the designation *indicus* as the Gull-billed Tern (*Gelochelidon anglica*) has to its specific denomination. It is like *C. tricollaris* of South Africa, but larger, with no white on forehead, and four dark bands on the inner web of the outermost and penultimate tail-feathers; white occipital crescent, passing forwards to above but not anterior to the orbits; a broad black gorget, crossed by a white band, which divides it into two narrower black bands; throat albescent; bill black at tip, apparently orange-coloured at base; feet probably orange-coloured*. Length of wing 5 inches, of tail 2·875 in., and of bill from forehead ·625 in.

CHARADRIUS PERONI = *C. pusillus*, Horsfield.

THRESCIORNIS MELANOCEPHALUS. Contrary to what is stated

* Dr. Jerdon states erroneously that the legs of *C. philippensis* are yellow, instead of pale flesh-colour.

in Mr. Gould's 'Hand-book of the Birds of Australia,' this species differs from *T. æthiopicus*, and resembles the Australian *T. strictipennis* in having the long pectoral plumes when in breeding-dress. The naked portion of the neck is considerably less extended than in *T. æthiopicus*.

RALLUS INDICUS, nobis (as distinguished from *R. aquaticus*). From Japan (Leyden Museum) (*cf.* *Ibis*, 1867, p. 172*).

ANSER CYGNOIDES (*ferus*). Has a mere rudiment of the frontal knob, a narrow ring of white at base of bill, orange legs, and the colours of the plumage are well contrasted. Leyden Museum.

BERNICLA RUFICOLLIS is probably the species of which four were seen near Nagpore, one of which was procured. ('Bengal Sporting Magazine' for April 1836, p. 247.)

CASARCA SCUTULATA (*C. leucoptera*, nobis). Three specimens in the Leyden Museum, all abnormally parti-coloured, and having a domesticated appearance, unlike the wild race, which Dr. Jerdon has observed upon the Brahmaputra (*cf.* *Ibis*, 1867, p. 176.)

DENDROCYGNA GUTTATA of Celebes. A diminutive of the American *D. arborea*. *D. vagans*, Eyton, also from Celebes, with an unusually speckled breast. Leyden Museum.

DENDROCYGNA FULVA, of America, seems to be quite undistinguishable from *D. major* (*Ibis*, 1867, p. 175)! Specimens from Africa and America in the Zoological Gardens, Regent's Park, were absolutely alike.

XI. Note on the Systematic Position of Indicator.

By P. L. SCLATER, M.A., Ph.D., F.R.S.

WITH one single exception, as far as I know, all writers on ornithology have hitherto concurred in referring the genus *Indicator* to the family *Cuculidæ*. The dissident authority is Mr. Blyth, who has thus spoken on the subject:—

* The reference (*ibid.*) for *Crex pratensis* having been once obtained in Oudh is in the 'Bengal Sporting Magazine' for 1842, p. 870.

“The affinities of this genus I have long considered to be with the Woodpeckers and not with the Cuckoos; their feet are formed exactly as in the former group, not as in the latter; and they are accordingly known to climb the boles of trees, in the cavities of which they deposit numerous shining white eggs, wherein also they resemble the Woodpeckers. I am unacquainted with the conformation of their soft parts, further than that the traveller Bruce informs us, of his ‘Bee Cuckoo’ (Appendix to ‘Travels to Discover the Source of the Nile,’ v. 179), that the tongue is sharp-pointed, can be drawn to almost half its length out of the mouth beyond the point of the beak, and is very flexible,—a statement which I did not remark until long after I had arrived at the opinion here expressed. If my view be correct, it will probably be further confirmed by the stomach proving to have its muscular coat considerably more developed than in the Cuckoos; by the absence of cæca, as in the Woodpeckers (normally), these existing in all the Cuckoo tribe which I have examined; and by the sternal apparatus, the form of which is very different in the Woodpeckers and Wryneck from what it is in the Cuckoos. The Barbets (*Bucco*) are quite distinct from either, and more nearly allied in internal conformation to the South-American group of Toucans (*Ramphastidæ*), which they even resemble in the peculiar character of having short imperfect clavicles.”—J. A. S. B. xi. p. 167, 1842.

These remarks of Mr. Blyth have long made me desirous of becoming acquainted with the internal structure of *Indicator*, concerning which, as far as I know, we have no recorded information whatever. But it is only recently, through the kindness of Mr. E. L. Layard, that I have succeeded in obtaining a specimen of a bird of this genus in spirits. The examination of this example, although not by any means in a good state of preservation, has enabled me to determine several points concerning the structure of *Indicator*; and I therefore propose to submit to the readers of ‘The Ibis’ a few notes on the subject, trusting that Mr. Layard will not fail to answer my appeals for further and more perfect specimens, so that all doubt as to correct position of this somewhat obscure but interesting form may be set at rest.

First, as regards the internal structure of *Indicator*. The tongue is very small, short, smooth and not extensible; so that it shows no resemblance at all to the structure of the organ in *Picus*, but is very like the tongue of *Cuculus*. There are scarcely any traces of lateral lacerations, in which respect it also resembles *Cuculus*, and departs very widely from *Picus*.

There is not much to be gathered of the structure of the digestive organs of *Indicator* from the present specimen, on account of its bad condition. But the muscular coat of the stomach is certainly not much developed, and there appear to be no traces of cæca. The whole length of the intestinal tube from the stomach to the anus is about 8 inches. The stomach was crammed with comminuted remains of the hard parts of insects, saturated with a peculiar resinous fluid, which may, perhaps, have been derived from these insects.

As regards the osseous structure of *Indicator*, I have been able to extract from the present example a nearly perfect sternum. This, it will be observed from the figures, presents obvious points of distinction from both the Picine and Cuculine form of sternum, and leads me to believe that *Indicator* belongs to a

Fig. 1.

Sternum of *Indicator minor*.

Fig. 2.

Sternum of *Megalæma asiatica*.

different natural family from either of these groups. All *Picidæ*

present the bifurcated "rostrum sterni," which shows their alliance to the *Passeres*. Of this there is no trace in *Indicator*. The typical Cuculine sternum is short and broad, with a single shallow posterior notch, very different from that of *Indicator*, which has two deep fissures on each side converted into foramina by the ossification of the posterior margin. In the form of its sternum *Indicator* appears to me to approach more nearly to *Megalæma* than to any other bird with which I am acquainted. This general resemblance is much increased by the incomplete ossification of the furcula in *Indicator*, which is likewise the case in all the true *Capitonidæ* that I have examined. The coracoids were so destroyed by shot in the present example that I could not restore them well enough to add them and the furcula to my figure. But it is quite evident from the remaining portions of them that the osseous furcula consists, as in *Megalæma*, of two simple separate rami, each terminating in a somewhat acute point before reaching the keel of the sternum.

Prof. Huxley, who has been kind enough to examine for me the skull of *Indicator*, writes as follows upon this part of its structure:—

"The skull of *Indicator*, which you have sent to me, is not altogether in a satisfactory condition. One point, however, is perfectly clear, namely that the maxillo-palatines, instead of being large, swollen and united with one another, and with an ossified interseptum, as in the Cuckoos, are quite small, and do not extend inwards beyond the inner margin of the palatine bones.

"The vomers appear to be wholly or in a great measure distinct, and are more like those of the *Coracomorphæ* than Cuculine.

"So far, therefore, as this skull may be depended upon, I should be disposed to put *Indicator* in the *Ægithognathous* division, as an aberrant group having relations with the Woodpeckers. But of course this is a mere indication, and must be checked by study of the rest of the organism of the bird."

The pterylosis of *Indicator*, as already shown by Nitzsch*, differs in many important points from that of the *Cuculidæ*.

* 'Pterylography,' Ray Society's translation, p. 90-92.

There is a small accessory plume present in *Indicator*, which is not found in the Cuckoos. The oil-gland of *Indicator* has a circlet of feathers at the tip; in the *Cuculidæ* it is naked. *Indicator* has 12 perfect rectrices in the tail; no true Cuculine bird has more than 10*. Finally, the disposition of the contour-feathers on both the upper and lower surface of *Indicator* is different from that of the *Cuculidæ*, "there being on the breast a perfectly free branch of the inferior tract, whilst the dorsal tract, which remains simple as far as the pelvis, exhibits a rhombic saddle, enclosing a lanceolate space"†. In the *Cuculidæ*, generally, the inferior tract is rather widely dilated, and in some cases enclosed a narrow insular space; but there is no free tract, whilst the space enclosed in the dorsal tract is much elongated and very narrow, extending from between the shoulder to the caudal pit.

Under these circumstances, whilst there is still much to learn concerning the structure of *Indicator*, the following conclusions may, I think, be deemed sufficiently proved.

1. *Indicator* differs in important particulars, both of osteology and pterylosis from the true *Cuculidæ*, and cannot be permitted to remain in the same family.

2. Mr. Blyth's suggestion that *Indicator* might belong to the *Picidæ* is not supported by facts.

3. *Indicator*, and its allied forms *Melignotheres*, *Heteroderes*, and others, must be for the present regarded as constituting an independent family of *Coccygomorphæ* sive *Coccyges*, which should be called *Indicatoridæ*.

4. The family *Indicatoridæ* may be temporarily best placed in the second section of the *Coccygomorphæ*, as arranged by Prof. Huxley (P. Z. S. 1867, p. 466), next to the *Capitonidæ*.

P.S. Feb. 24, 1870.—In Mr. Blanford's new work on the 'Natural History of the Abyssinian Expedition,' of which I have seen the proof-sheets since I wrote this article, nearly similar conclusions as to the correct position of *Indicator* are arrived at.

* Burmeister (Syst. Ueb. Thiere Bras. ii. p. 258) assigns 12 rectrices to the genus *Cultrides* sive *Neomorphus*; but this, I believe, is an error.

† Nitzsch, l. c. p. 92, tab. iv. figs. 16 & 17.

XII.—*Stray Notes on Ornithology in India.*

By ALLAN HUME, C.B.

No. IV. *A new Genus of Sylviidæ.*

JERDONIA.

Bill, straight, slender, entire or very faintly notched, slightly widened at base, compressed towards the tip; culmen distinctly raised, acute at base. Tip of upper mandible very slightly deflected; two (or three) stout bristles on either side of the gape.

Tarsus, stout, rather short, with transverse scutes (usually five).

Foot, hind toe short, claw moderately curved, compressed, rather deep; front toes slender, the middle longer than or as long as the laterals with their claws; outer toe in some specimens a hair's breadth the longest, but both lateral toes very nearly equal, and usually very slightly shorter than the hind toe.

Wings, third, fourth, and fifth primaries subequal; fourth, if any thing, a trifle the longest; second primary from $\frac{7}{8}$ to $\frac{8}{9}$ of the length of the third; first about $\frac{2}{5}$ of the second.

Tail, moderate, decidedly but not abruptly rounded.

Skull, well raised above the bill-line.

This genus has in some respects a very Phylloscopine character, but it is also nearly allied to other subgroups. In the first place, in the skulking, dense-covert-frequenting habits of the only known species, this genus approximates closely to the Reed-Warblers. In fact, the bills of *Calamodyta phragmitis*, *Calamoherpe arundinacea*, and *Acrocephalus agricola* are all virtually identical with the bill of *Jerdonia*. The two or three stout bristles on either side of the gape, the moderate-sized first primary (contrasting with the exceedingly minute ones of the three first-named birds, and their congeners), and the short hind and elongated middle toe of *Jerdonia* suffice to separate it.

In the shape of the wing this genus more closely approaches *Hypolais elatica* and *H. polyglotta*; but the bills of these are broader, less compressed towards the tips, and more of the type of that of *Phyllopneuste rama* than of *Jerdonia*. The bill in this latter is almost a miniature of that of *Aedon galactodes*, but is slightly less compressed in the middle than that of this last species, and is considerably more sharply pointed. In the

wing of this last (in other respects very similar) the first primary is proportionally much less, and the second rather more developed than in *Jerdonia*.

Phyllopneuste rama, to a casual observer, very closely resembles our type-species of *Jerdonia*. But the bill of the former is more depressed, wider, less compressed, blunter-pointed, and has a less well marked culmen. Moreover, as a rule, the skull is less raised and more *Acrocephalus*-like in *P. rama*, than in *Jerdonia*, and the tarsus of the former is longer and the mid toe shorter than in the latter.

Compared with *Phylloscopus*, the bill is, as a rule, longer, the first primary less developed, the feet proportionally larger, the mid toe more elongated, and the hind claw smaller and less curved. I say as a rule, because wide differences of structure exist in the birds usually included in the one genus *Phylloscopus*. *P. fuscatus*, for instance, has a bill the exact miniature of that of *Aedon galactodes*, the first primary more than half as long as the second, the fourth and fifth longest, and the third and sixth subequal, and only a trifle shorter than the fourth and fifth, while the second is quite $\cdot375$ in. shorter than the third. In *P. sibilatrix* the bill, though slightly more compressed at the point, is that of *Phyllopneuste rama*, while the first primary is exceedingly minute, as in a Reed- or Sedge-Warbler, and the rest of the wing pointed almost like a Falcon's, the third primary the longest, the fourth nearly $\cdot125$ in. shorter, the fifth shorter by even a greater amount than the fourth, the sixth similarly shorter than the fifth, and the second at most $\cdot125$ in. shorter than the third. I may add that the notes and flight of these two species are equally different.

Similar differences are observable in other species of the genus when good, fresh* specimens in perfect plumage are compared.

JERDONIA AGRICOLENSIS, sp. nov.

Dimensions. Length $4\cdot5$ to 5 , expanse $6\cdot5$ to 7 , wing $2\cdot22$ to $2\cdot32$, tail from vent $1\cdot9$ to $2\cdot1$, tarsus $\cdot8$, middle toe and

* The practice of closing the mouth before skinning, by running a thread through the nostrils and tying it round the bill tightly, greatly modifies the shape of the bill in many dried specimens, converting broad depressed upper mandibles into comparatively narrow and compressed ones. Even after the moult is complete it is some time before the primaries assume their normal proportions.

claw .63, hind toe and claw .4, outer toe and claw .38, bill from front .35 to .39, from gape .55 to .62, width at gape .28, height at base .09.

Description. Bill—upper mandible dark brown, with the edges light; lower mandible flesh-coloured, rather dusky towards the tip; inside of mouth orange-yellow. Legs and feet fleshy-grey; in some tinged with yellowish, especially on the soles, in some glaucous. Irides, hazel-brown.

Plumage (*immediately after the autumnal moult*): feathers of the head, nape, back, and scapulars lax, hair-brown, tinged towards the margins with a paler, slightly rufous- or fulvous-brown (the whole in some specimens with a faint shade of olive). Rump paler and rather more rufous in tone. Upper tail-coverts hair-brown, with lighter fulvous-brown edges. Tail dark brown—all but the two outermost rectrices very narrowly margined with pale fulvous- or greyish-white, outermost feather on each side with the whole of the outer web dull or greyish-white. Tips and internal margin also greyish-white. Rectrices next to the outermost similar, but with less white on the outer webs and more on the tips.

A conspicuous superciliary streak from the nostril extending over the eye to the ear-covert of a pale buff, or rich cream-colour. Lore, cheek, and ear-covert the same as the crown of the head, but of a lighter shade. The whole lower parts buffy, varying in shade and in warmth of tone in different specimens, but always palest, and in some almost white, on the chin, the middle of the abdomen, the vent and lower tail-coverts. Sides and flanks slightly infuscated. Axillaries, wing-lining, and edge of wing from carpal joint cream-coloured, varying in warmth of tinge in different specimens. Lower surface of remiges and rectrices brownish grey.

The wing hair-brown, as dark as the tail, the primaries and secondaries very narrowly, and the coverts and tertiaries broadly margined with rufous- or fulvous-brown of the same tone as the rufous of the back.

It is only on close examination that the difference in the colours of the margins and centres of the feathers of the head, back, and other parts is observed; looked at from the distance of

a couple of feet, these parts appear of a uniform brown, less rufous in tone than that of the same parts of *Acrocephalus agricola*, to which the bird, after its autumnal moult, presents a general resemblance in colouring (though of course differing, as already noticed, in structure) but still, in most specimens, with a certain shade of rufous. The amount of this, of course, varies, some specimens being greyer and some more rufous.

At this season of the year it would be impossible (setting aside structural differences) to mistake this species for *Phyllopneuste rama*: it is altogether a darker bird, conspicuously so when on the wing; it never has the uniformly mouse- or grey-brown of that species; its habits too are widely different, quite those of an *Acrocephalus* (like *A. dumetorum*), frequenting thick crops, from which it is only flushed with great difficulty, dropping again after a short flight. *P. rama*, on the other hand, is rarely found in, and never sticks close to, thick ground-covert, but affects trees and bushes, more especially the babool (*Acacia arabica*).

The notes are entirely those of an *Acrocephalus*, most resembling those of *A. dumetorum*, but perhaps rather more Saxicoline in their character. In the spring and summer the whole upper surface of the bird becomes paler and what some would describe as more rufous, others as more sandy, while the lower parts lose a great deal of their warm buffy tint. The remiges and rectrices also fade similarly. In this stage it might easily be mistaken by a casual observer for a small specimen of *P. rama*; but its upper surface is always somewhat more rufous in tone than that of the latter.

Comparing specimens of our new bird freshly moulted, at the close of September, with specimens of *P. rama* in similar plumage, the difference (independent of structure and habits) is very noticeable. *P. rama*, even in its fresh feathers, is a smooth, light grey-brown bird, very uniform in colour, and with the lower parts quite devoid of the ruddy buff tint of *Jerdonia*. The feet too of *P. rama* are of a greenish-blue-grey, darker about the foot (the soles excepted), while the feet of *Jerdonia* are of a warmer flesh-colour; indeed, in the colour of the feet and tarsi the birds differ conspicuously.

Of the distinctness of this species, which Dr. Jerdon was the first to suspect, having picked out a peculiarly small specimen in Mr. Brooks's collection as not, in his opinion, referable to *P. rama*, there can be no doubt. Mr. Brooks and I have worked the matter out with more than sixty specimens of the new species and a large series of *P. rama* before us; and that gentleman (who himself procured all these specimens, some of which we have had in the flesh before us while writing the above descriptions) has personally observed its habits and haunts. In general appearance, at one season of the year, as has been said, it much resembles *P. rama*; but in its habits, notes, and even change of tone of colour at different seasons it far more closely approximates to *Acrocephalus*. It forms, indeed, in our opinion, a sufficiently well marked intermediate type demanding the generic separation we have accorded to it.

XIII.—*On some other new and little-known Birds, collected during the Voyage round the World in 1865–68 of H. I. M.'s S. Magenta.* By HENRY HILLYER GIGLIOLI, Sc.D., C.M.Z.S., and THOMAS SALVADORI, M.D., C.M.Z.S.*

1. ACRIDOTHERES LEUCOCEPHALUS.

A. capite collo ac uropygio albis, dorso nigro-schistaceo, alis brunneis, subtus albo-rubescens.

Head and neck white, the feathers on the top of the head rather lengthened and pointed, a large naked space of a dark reddish colour around the eyes; back of a dark slate-black, rump and upper tail-coverts (except the posterior ones, which are black) of a pure white; wings of a silky brown as in *A. tristis*, the spurious wing, carpal region, under wing-coverts and the basal portion of the primaries white; a partial collar bordering the base of the posterior part of the neck, the breast and abdomen reddish-white, nearly rosy, tinged on the sides with greyish, the mesial abdominal region being of

* Other new species of birds collected during the same voyage were described by the same authors in 'The Ibis' for 1869, pp. 61–68, and in the 'Atti della Società Italiana di Scienze Naturali,' vol. xi. pt. iii. (1868).

a nearly pure white, which extends over the under tail-coverts; thighs white on the inner side, and of a slate-grey externally: tail black, tipped with white, which on the outer rectrices extends over nearly one-third of the entire length of the feather, diminishing gradually on the others up to the two middle ones, on which it forms merely a slight border. Bill and legs yellow, the former reddish-orange at the base; iris brown.

Total length 0^m·220; wing 0^m·130; tail 0^m·075; bill from forehead 0^m·023.

Hab. Thu-Duc, French Cochín-China.

This species is a true *Acridotheres*, and belongs to the group characterized by the naked periophthalmic space, as *A. ginginianus*, *A. tristis* and *A. melanopterus*. It is so distinctly defined as not to be easily confounded with any of the other known species, although in some respects it resembles both *A. tristis* and *A. melanopterus*. The only specimen forming part of the 'Magenta' collections was shot near Thu-Duc, a few miles above Saigon, on the 7th of June, 1866. It is now in the Zoological Museum of Turin.

2. LEPTOPTILA CHLORAUCHËNIA.

L. Leptoptilæ rufaxillæ valde affinis, sed major, rostro longiore, occipite ac cervice magis viridescens.

Upper parts of an olive-brown, showing green metallic reflections under certain lights; forehead and throat whitish; back of head and neck grey, glossed with green and purplish reflections; underparts of a vinous white, darker on the chest; abdomen and under tail-coverts pure white; remiges and rectrices dark grey, the latter, except the four middle ones, tipped with white; under wing-coverts and inner webs of the primaries rich cinnamon-brown; bill black, tarsi and feet reddish, iris orange-red.

Total length 0^m·310; wing 0^m·160; tail 0^m·110; tarsi 0^m·029; bill from forehead 0^m·020.

Hab. Uruguay.

"Not so common as *Zenaida maculata* in the neighbourhood of Montevideo, but conspicuous, when flying, on account of the reddish colour on the under surface of the wings. I shot two specimens in the garden of the *estancia* 'Trinidad' in January

1866, one of which only was preserved and is now in the Turin collection" (H. H. G.).

Although this species is very nearly allied to *L. rufaxilla*, yet it appears to us sufficiently distinct to be considered specifically so. Most probably this is the species called by Azara "*Paloma parda tapadas roxas*" (Parag. n. 320). Quid *Peristera* (*Leptoptila*) *macroactyla*, Gray, List *Columbæ*, p. 54 (deser. nulla!) ?

During the stay at Peking of part of the 'Magenta's' staff, for the conclusion of the treaty between Italy and China, in October 1866, Professor De Filippi was presented by Father Armand David, the missionary naturalist who has done so much towards bettering our knowledge of the Mongolian and Manchurian fauna and flora, and by M. Fontanier, one of the secretaries attached to the French legation, with several ornithological rarities; amongst others the Professor received two birds of particular interest, which both he and one of the authors (H. H. G.) at once perceived to be new. Mr. Swinhoe, who was communicated with on the subject, could not identify either; some time afterwards, however, he also succeeded in getting specimens of both from Peking, and described them (*Ibis*, 1868, pp. 60-62),—one as the type and only known species of a new genus, *Pterorhinus davidi*; the other as *Drymæca* (?) *pekinensis*. M. Jules Verreaux subsequently proposed that the latter (which is no *Drymæca*) should be placed in the Australian genus *Amytis*; but we believe it to form the type of a new genus, which ought to be placed next or near to *Laniellus*, Swainson, as the so-called *Drymæca pekinensis* resembles *L. leucogrammicus*, Temm. (Pl. Col. 592), not only in shape, but also in colour. Thus we propose for it the generic appellation:—

RHOPOPHILUS.*

The only known species of this new genus is:—

RHOPOPHILUS PEKINENSIS;

Drymæca ? *pekinensis*, Swinhoe, *Ibis*, 1868, p. 62.

Amytis pekinensis, J. Verreaux, *ibid.* p. 499.

* From ῥῶψ, a thicket, and φίλος, loving.

XIV.—*A list of the Birds of Turkey.* By H. J. ELWES, F.Z.S., late Capt. Scots Fusilier Guards, and T. E. BUCKLEY, B.A., F.Z.S.

(Continued from p. 77.)

45. *PICUS MARTIUS*, L.

Found in the forests of Bulgaria, but nowhere numerous. We shot one in rather open country near Rassoava, where only a few stunted oaks were found in the valleys. There can be no doubt that the pine-forests of the Balkan are a favourite resort of this bird; but we never saw or heard it in Macedonia.

46. *PICUS VIRIDIS*, L.

Common in all the woods of Turkey, and differs in no respect from English specimens.

47. *PICUS CANUS*, L.

We observed one near Babadagh in Bulgaria, and it has been shot several times near Constantinople by Mr. Robson.

48. *PICUS MAJOR*, L.

Very common in all the wooded districts that we visited. Some specimens shot in Macedonia are of a pure white underneath, instead of the usual dingy colour.

Mr. Tristram, who some years ago examined a series of specimens of this bird sent from Constantinople by Mr. Robson, remarks that it is "an intermediate form between the European *Picus major* and the *P. syriacus* of Hemprich and Ehrenberg. It differs in the arrangement of the colours of the neck-plumage very slightly from the western bird, but still varies in the direction of the eastern."

49. *PICUS MEDIUS*, L.

Common in Macedonia, and near Constantinople, frequenting gardens and open country in preference to the deep forest.

50. *PICUS LEUCONOTUS*, L.

Never observed by us, but has been killed by Mr. Robson near Constantinople, and in Albania by Lord Lilford.

51. *PICUS MINOR*, L.

The commonest Woodpecker in Macedonia, where it seems to prefer the alders and willows in the marshy forests to the

larger and sounder timber of the hills. Our specimens do not appear to differ from those of Western Europe; but some from Constantinople are said by Mr. Tristram to have less red on the neck.

52. *JYNX TORQUILLA*, L.

We heard the unmistakable cry of this bird several times in Bulgaria, and saw it in Mr. Robson's collection.

53. *CUCULUS CANORUS*, L.

We cannot speak as to the abundance of this Cuckoo; but it is constantly found in Northern Turkey.

54. *CORACIAS GARRULA*, L.

Common in most parts of the country. It arrives in the north about the last week in April.

55. *MEROPS APIASTER*, L.

Common, and arrives about the same time as the Roller, with which it associates. Colonies of Bee-eaters breed in the earthy cliffs of the Danube, making their holes in the bank like Sand-Martins.

56. *ALCEDO ISPIDA*, L.

Not uncommon in suitable localities, though we never saw more than two or three.

57. *UPUPA EPOPS*, L.

Very common in Bulgaria, where it arrived the first week in April, and frequented the stony hill-sides and bare plains of the Dobrudscha, as well as the orchards and vineyards. A Hoo-poe pie is said to be a common dish in summer at Kustendji, where it is known by the name of "Poopoo."

58. *CORVUS CORAX*, L.

This universal bird is more or less common in all parts of the country that we visited, and is much tamer than in England.

59. *CORVUS CORNIX*, L.

Common almost everywhere.

60. *CORVUS CORONE*, L.

Included by Col. Drummond-Hay in his list, but never identified by us.

61. *CORVUS FRUGILEGUS*, L.

Common in Macedonia and Bulgaria.

62. *CORVUS MONEDULA*, L., var. *COLLARIS*, Drumm.

Notwithstanding what Col. Drummond-Hay has said (Ann. & Mag. N. H. xviii. p. 11) concerning this bird, we cannot allow that it is any thing more than a local variety of the common Jackdaw. We took some trouble to clear up this disputed point, and shot and skinned many specimens. We think that, though a very old well-marked Turkish Jackdaw might at first sight appear quite different from our English bird, yet, on comparing a number of specimens, the Collared Jackdaw glides so imperceptibly into the common species that it cannot be regarded as any thing more than an eastern race. The young birds show no more collar than ours do, though always a little grey on the head; and in habits they are absolutely similar*. The Jackdaw is about the commonest bird in Macedonia, every house and village being tenanted by a large number. They are never molested by the natives, and are consequently very tame; but if the least notice is taken of them, or a shot fired, they alter their habits at once, and become as wary as an old Magpie. Every evening the Jackdaws from the whole plain of Salonica used to assemble in large bands, and fly to a great roosting-place in the impenetrable marshes of the Karasmak river. The numbers there must be something extraordinary; for we found that the Jackdaws from every place we stayed at in the country left at night for the same roosting-place, in some instances thirty miles away. The collared race is found

* [It seems as if *Corvus collaris* might be looked upon as the intermediate form between the *C. monedula* of Western Europe and the *C. dauricus* of Central Asia. A comparison of the figures given of this last by Pallas (Zoogr. R.-As. pl. xv.) and by Messrs. Gray and Mitchell (Gen. B. pl. lxxvi.) shows that it differs a good deal in the hue of the light-coloured neck and breast, which in Pallas's figure are represented as much less well defined than in Mitchell's. III. Dybowksi and Parrex, in their list of Daurian birds, observe (J. f. O. 1868, p. 332) that more or less black varieties occur.—ED.]

in Bulgaria, the Crimea, and up the Danube into Servia; but in Greece we saw none at all.

63. *PICA EUROPEA*, Cuv.

Very common everywhere.

64. *FREGILUS GRACULUS* (L.).

We never saw this bird in Turkey proper, but got a specimen from Mr. Robson, which was killed at Kara Hissar in Asia Minor.

65. *FREGILUS PYRRHOCORAX* (L.).

Observed in Epirus by Lord Lilford.

66. *GARRULUS GLANDARIUS* (L.).

Common in Macedonia, and differs in no way from English specimens.

67. *GARRULUS STRIDENS*, Ehrenberg.

Found near Constantinople by Mr. Robson, who says that it breeds in the Forest of Belgrade. Specimens sent to England by him, some of which are now in Lord Walden's collection, were submitted to Mr. Tristram, who says of them that "the black crest scarcely extends so far down the occiput as in specimens from Syria and Asia Minor (Smyrna), and the last are rather darker on the back than the Syrian." On the subject of these Jays we refer our readers to Mr. Tristram's published remarks (*Ibis*, 1866, pp. 61, 62).

68. *LANIUS EXCUBITOR*, L.

Seen occasionally by us in Macedonia, in February; but whether it breeds there is uncertain.

69. *LANIUS MINOR*, Gmel.

A summer visitor to Turkey, and not uncommon in some parts. It arrived in Bulgaria the last week in April.

70. *LANIUS COLLURIO*.

We only shot one specimen at Belgrade, on April 22nd; but Mr. Robson says it is common in summer.

71. *LANIUS AURICULATUS*, P. L. S. Müller.

In Mr. Robson's collection. He says it is not uncommon in summer.

72. STURNUS VULGARIS, L.

Common all over the country in flocks, and differs neither in plumage nor habits from English birds.

73. STURNUS UNICOLOR, La Marmora.

Found at Corfu by Lord Lilford.

74. PASTOR ROSEUS (L.).

This bird is, in some years, very abundant in Bulgaria, but does not come regularly. It is one of the latest summer visitors to arrive, as the flocks do not make their appearance before the latter end of May, when they at once take up their quarters in a sandpit, or bank of earth, and commence nidification. The nests are made at the end of a hole bored in the earth like a Sand-Martin's, sometimes to a considerable depth. The eggs are like a Starling's, but much more glossy and of a paler blue. Near Milchooa, in the Dobrudscha, we saw the breeding-place of a large colony; and Mr. Barkley informed us that, in the summer of 1867, a cutting on the Varna and Rustchuk railway was frequented by two or three hundred of this species.

75. PASSER DOMESTICUS (L.).

This is the common Sparrow in all the Turkish towns that we visited; and though Mr. Robson tells us that the Spanish Sparrow is not uncommon in the Bosphorus, we never observed it personally.

76. PASSER HISPANIOLENSIS (Temm.).

Several specimens were in Mr. Robson's collection.

77. PASSER MONTANUS (L.).

Common in Macedonia, where it frequents the fields in flocks; but we never remarked it in the towns, as Col. Drummond-Hay seems to have done.

78. PETRONIA STULTA (Gmel.).

Not observed by us, but is not uncommon near Constantinople.

79. PYRRHULA EUROPEA, Leach.

We did not see the Bullfinch in Bulgaria; but it appears to be common in other parts of the country.

80. *LOXIA CURVIROSTRA*, L.

Sometimes appears near Constantinople, though there are no pine-forests which would give it a suitable home nearer than Mount Olympus or the Balkan.

81. *COCCOTHAUSTES VULGARIS*, Steph.

Common, especially in the hills of Macedonia, where it feeds on the seeds of a thorny shrub which covers the sides of the mountains.

82. *FRINGILLA CHLORIS*, L. }
83. *FRINGILLA CŒLEBS*, L. } Common in Macedonia.

84. *FRINGILLA MONTIFRINGILLA*, L.

Not uncommon in the winter, in many parts of Turkey. One was shot in full summer plumage on April 1st, at Kustendji.

85. *FRINGILLA CARDUELIS*, L.

Very common in flocks, especially in the south of Turkey and Greece.

86. *FRINGILLA SPINUS*, L.

We saw several small flocks feeding on the alders on the banks of the Bistritza, near Verria.

87. *FRINGILLA SERINUS*, L.

Not uncommon.

88. *FRINGILLA CITRINELLA*, L.

Found by Mr. Robson near Constantinople, also in Epirus by Lord Lilford.

89. *FRINGILLA CANNABINA*, L.

Common.

90.† *FRINGILLA RUFESCENS*, Vieillot.

Found in winter by Mr. Robson.

91. *EMBERIZA MELANOCEPHALA*, Scopoli.

Mr. Robson informs us that this species is common, and arrives in flocks at the end of April, frequenting the lower grounds, and breeding in gardens.

92. *EMBERIZA CITRINELLA*, L.

Seen on the mountains of Macedonia, and also found near Constantinople.

93. *EMBERIZA MILIARIA*, L.

Common everywhere.

94. *EMBERIZA CIRLUS*, L.

Common and resident.

95. *EMBERIZA CIA*, L.

Common in Macedonia and Bulgaria.

96. *EMBERIZA PITYORNIS*, Pall.

Occurs in winter in the Bosphorus, but is not common. We obtained two specimens from Mr. Robson.

97. *EMBERIZA HORTULANA*, L.

Very common in summer all over Turkey.

98. *EMBERIZA STRIOLATA*, Licht.

A specimen is in Mr. Robson's collection.

99. *EMBERIZA PUSILLA*, Pall.

A rather rare winter visitor to the Bosphorus.

100. *EMBERIZA SCHÆNICLUS*, L.

Common in suitable situations.

101. *EMBERIZA PALUSTRIS*, Savi.

We saw it in Macedonia in February; and Mr. Robson says it is common.

102. *ALAUDA ARVENSIS*, L.

Common on the plains. Mr. Tristram remarks of specimens from Constantinople that they are "identical with our own, and not the *A. cantarella* of Bonaparte from Southern Palestine."

103. *ALAUDA ARBOREA*, L.

Mr. Robson says it is common, and resident near Constantinople.

104. *ALAUDA BRACHYDACTYLA*, Leisler.

According to Mr. Robson, this is only a summer visitor to Turkey; but we shot specimens at Athens in January, during a sharp frost, and in the Crimea in March. A Short-toed Lark

flew on board the steamer which took us to Kustendji from Odessa.

105. *ALAUDA CALANDRA*, L.

Common and resident.

106. *ALAUDA CRISTATA*, L.

Very common, frequenting the neighbourhood of houses and yards, where it may be seen pecking about like a Sparrow.

107. *ALAUDA SIBIRICA*, Gmel.

In Mr. Robson's collection. He says it appears occasionally in hard winters.

108. *OTOCORYS ALPESTRIS* (L.).

Mr. Robson finds it in winter on the hills; but it is not common.

109. *ANTHUS PRATENSIS* (L.).

Common on the mountains.

110. *ANTHUS TRIVIALIS* (L.).

Common.

111. *ANTHUS CAMPESTRIS* (L.).

In Mr. Robson's collection. Breeds near Constantinople.

112. *ANTHUS CERVINUS*, Pall.

Not uncommon as a winter visitor.

113. *ANTHUS SPINOLETTA* (L.).

In Mr. Robson's collection.

114. *ANTHUS OBSCURUS* (Lath.).

Found in Epirus by Lord Lilford.

115. *MOTACILLA SULPHUREA*, Bechst.

Very common at all seasons on the Bosphorus.

116. *MOTACILLA ALBA*, L. } Common.

117. *BUDYTES FLAVUS* (L.). }

118. *BUDYTES MELANOCEPHALUS*, Savi.

Not uncommon.

119. *BUDYTES RAYI*, Bp.

In Mr. Robson's collection.

120. CINCLUS AQUATICUS, Bechst.

Found in Albania by Lord Lilford. Specimens from near Trebizond, which were procured by Mr. Robson, are found to belong to the black-bellied race, *Cinclus melanogaster* (cf. Ibis, 1867, p. 116).

121. ORIOLUS GALBULA, L.

A common summer visitor, arriving in the middle of April.

122. PETROCINCLA CYANEA (L.).

123. PETROCINCLA SAXATILIS (L.)

} Found in Epirus by
Lord Lilford.

124. TURDUS TORQUATUS, L.

Observed by us in the Dobrudscha, and also found near Constantinople.

125. TURDUS MERULA, L.

Common.

126. TURDUS SIBIRICUS, Pall.

One specimen of this bird was killed near Kustendji by Mr. A. Cullen.

127. TURDUS PILARIS, L.

Common during winter in suitable situations.

128. TURDUS ILIACUS, L.

Observed by Col. Drummond-Hay in Macedonia, and by Mr. Robson at Constantinople.

129. TURDUS VISCIVORUS, L.

Not uncommon.

130. TURDUS MUSICUS, L.

131. ERYTHACUS RUBECULA, L.

} Common.

132. RUTICILLA PHÆNICURA, L.

We never observed it ourselves, but saw it in Mr. Robson's collection.

133. RUTICILLA TITHYS (Scopoli).

Not uncommon in the south of Turkey.

134. SAXICOLA ŒNANTHE (L.).

Very common, especially in Bulgaria; but we never observed any other species of Wheatcar ourselves.

135. *SAXICOLA LEUCOMELA* (Pall.).

Mr. A. Cullen informs us that it is not uncommon in summer near Kustendji and breeds there.

136. *SAXICOLA AURITA* (Temm.).

Found in Epirus by Lord Lilford, and in Mr. Robson's collection.

137. *SAXICOLA STAPAZINA* (Gmel.).

Found in Epirus by Lord Lilford.

138. *PRATINCOLA RUBICOLA* (L.).

Not uncommon.

139. *PRATINCOLA RUBETRA* (L.).

In Mr. Robson's collection.

140. *ACCENTOR MODULARIS* (L.).

Not uncommon.

141. *ACCENTOR ALPINUS* (Gmel.).

Found in Epirus by Lord Lilford.

142. *PHILOMELA LUSCINIA* (L.).

We are sorry we can give no better information about the Warblers found in Turkey than a bare list of the species in Mr. Robson's collection, all of which were obtained by him in the neighbourhood of Constantinople. A careful search in other parts of the country would doubtless produce several additional species.

143. *SYLVIA ORPHEA*, Temm.

144. *SYLVIA ATRICAPILLA* (L.).

145. *SYLVIA MELANOCEPHALA* (Gmel.).

146. *SYLVIA HORTENSIS* (Gmel.).

147. *SYLVIA CINEREA*, Lath.

148. *SYLVIA CURRUCA* (Gmel.).

149. *SYLVIA SUBALPINA*, Bonelli.

Noticed by Lord Lilford in Epirus (*Ibis*, 1860, p. 231).

150. *SYLVIA SARDA*, La Marmora.

151. *AEDON GALACTODES* (Temm.).

152. *HYPOLAIS OLIVETORUM* (Strickl.).

153. *HYPOLAIS ELAICA* (Lindermeyer).

154. *CALAMOHERPE ARUNDINACEA* (L.).

Epirus, Lord Lilford.

155. *CALAMOHERPE STREPERA* (Vieillot).

156. *CALAMODYTA SCHÆNOBÆNUS* (L.).

157. *CALAMODYTA AQUATICA* (Latham).

158. *CALAMODYTA FLUVIATILIS* (Meyer & Wolf).

159. *POTAMODUS CETTI* (La Marm.)

160. *POTAMODUS SCHÆNICOLA*, Bp. } Epirus, Lord Lilford.

161. *PHYLLOPNEUSTE SIBILATRIX* (Bechst.).

162. *PHYLLOPNEUSTE TROCHILUS* (L.).

163. *PHYLLOPNEUSTE RUFÆ* (Lath.).

164. *PHYLLOPNEUSTE BREVIROSTRIS*, Strickl.

165. *REGULUS CRISTATUS*, Koch.

Not uncommon.

166. *REGULUS IGNICAPILLUS* (Brehm).

Several specimens have been obtained by Mr. Robson.

167. *TROGLODYTES PARVULUS*, Koch.

Common.

168. *CERTHIA FAMILIARIS*, L.

The Creeper found in southern and eastern Europe is usually supposed to be the *Certhia brachydactyla* of Brehm; but, with the exception of a slight rufous tinge on the belly and flanks, no difference whatever can be seen between specimens which we got from Mr. Robson and English ones. The latter may be a trifle larger; but we think that this, like many other of Brehm's "species," has no claim whatever to recognition.

169. *SITTA CÆSIA*, Meyer.

Common in Macedonia and near Constantinople, and does not differ materially from English specimens, though all the tints are brighter. Mr. Tristram remarks of Constantinople

specimens that they are "interesting as being entirely distinct from *S. europæa*, L. (*S. uralensis*, Licht.)—the white-breasted form, and about as rufous as Palestine examples, certainly quite as much as British ones."

170. *SITTA SYRIACA*, Ehrenberg.

Found in Epirus by Lord Lilford.

171. *PARUS MAJOR*, L.

172. *PARUS CÆRULEUS*, L. } Common.

173. *PARUS ATER*, L.

174. *PARUS PALUSTRIS*, L. } In Mr. Robson's collection.

175. *PARUS LUGUBRIS*, Natterer.

One specimen was shot, and others seen, on the banks of the Bistritza, in Macedonia.

176. *ACREDULA ROSEA* (Blyth).

We shot examples of this bird, both in Macedonia and Bulgaria, which agree exactly with British specimens, not having the white head of the German and Scandinavian form, *A. caudata* (L.).

177. *ACREDULA TEPHRONOTA* (Günther).

We never saw this species, though we searched for it twice in the valley of Buyukdere, which Mr. Robson informs us is one of its favourite haunts. It does not seem to come far to the west of the Bosphorus, though it is common on both sides of that strait. Mr. Robson is the only person we know of who has seen the Turkish Bottle-Titmouse in a state of nature; and he describes its habits as being exactly similar to those of the common species. The nest and egg, which he was kind enough to present us with, are also similar. It breeds early in March and April, and is very fond of a yew-tree for its nest. On comparing this species with the common Bottle-Titmouse, the tail is much shorter, and the tints are generally much darker, the black mark on the throat being always a good distinction, as indeed is made apparent by Dr. Günther's original description and Mr. Wolf's figures (*Ibis*, 1865, p. 95, pl. iv.).

178. *ÆGITHALUS PENDULINUS* (L.).

Found in Epirus by Lord Lilford.

179. *PANURUS BIARMICUS* (L.).

Found in Albania by Lord Lilford.

180. *MUSCICAPA GRISOLA* (L.).

This and the three following Flycatchers were all in Mr. Robson's collection, and said by him to be not uncommon.

181. *MUSCICAPA PARVA*, Bechst.

182. *MUSCICAPA ATRICAPILLA*, L.

183. *MUSCICAPA COLLARIS*, Bechst.

184. *HIRUNDO CAHIRICA*, Licht.

Said by Mr. Robson to be not uncommon about Constantinople.

185. *HIRUNDO RUSTICA*, L.

186. *CHELIDON URBICA* (L.).

187. *COTYLE RIPARIA* (L.).

} Common in summer.

188. *COTYLE RUPESTRIS* (Temm.).

Found in Epirus by Lord Lilford.

189. *CYPSELUS APUS* (L.).

Common. Arrives about the middle of April.

190. *CYPSELUS MELBA* (L.).

Several White-bellied Swifts were flying round the tower of Galata in Constantinople in the end of April. Mr. Robson says they are not uncommon.

191. *CAPRIMULGUS EUROPEUS*, L.

A Nightjar was seen on the 1st of May on an island of the Danube, which was covered with a dense thicket of willows; but we never saw the species on any other occasion.

192. *COLUMBA PALUMBUS*, L.

Tolerably numerous in most parts of the country, but never seen in large flocks. The Wood-Pigeon of Turkey appears to be rather larger and darker in its plumage than the British breed.

193. *COLUMBA CENAS*, L.

Not uncommon in Macedonia and Bulgaria, but not so numerous as in Greece, where it is the commonest species of Pigeon. Great numbers are brought to the market at Athens for food.

194. COLUMBA LIVIA, Temm.

Rock-Pigeons are found all up the Turkish coast of the Black sea, and probably in other localities. The only specimen we got was shot in the harbour of Sevastopol; and it resembled *C. schimperi* more than *C. livia*, though the rump was of a lighter colour than the rest of the back. There were plenty of them about the rocks on the north side of the harbour, and they appeared quite wild.

195. TURTUR VULGARIS, Eyton.

Mr. Robson informed us that this Dove is common in summer.

196. TURTUR RISORIUS (L.).

It is curious that this bird was so long denied a place in the European list of birds, as it inhabits most of the towns and villages in the south of Turkey, and remains all the winter. In Constantinople it is especially numerous, and also in some of the Macedonian villages, which are interspersed with trees and gardens. It appears to love the neighbourhood of dwellings, and may be seen sitting like a Sparrow on the roofs of the houses, where it is never molested by the Turks. It breeds in the cypresses which almost universally adorn a Turkish graveyard, and in the immense old plane trees in the bazaars.

[To be continued.]

XV.—On rare or little-known Limicolæ.

By JAMES EDMUND HARTING, F.L.S., F.Z.S.

(Plates V., VI.)

(Continued from 'The Ibis' for 1869, p. 434.)

AN attempt to identify the *Charadrius asiaticus* of Pallas, necessitates the examination of a very beautiful group of Plovers.

The peculiarity which, for the present purpose, connects the

different species of this group, is the assumption during the breeding-season of a bright rufous band across the breast. I say for the present purpose, because, as will be seen hereafter, the species which, on account of this peculiarity, are here brought together belong to two different genera—the one an inland genus, *Eudromias*, the other a littoral one, *Ægialitis*. To the former, which includes the true Dotterels, belong *Eudromias asiaticus* (Pallas), *E. veredus* (Gould), *E. modestus* (Lichtenstein), *E. australis* (Gould), and our well-known *E. morinellus* (L.)*. To the latter genus, which comprises the Shore-Plovers, belong *Ægialitis geoffroyi* (Wagler), *Æ. mongolicus* (Pallas), and *Æ. bicinctus* (Jard. & Selby).

Now, as regards four of these—*E. modestus*, *E. australis*, *E. morinellus*, and *Æ. bicinctus*, no difficulty arises. They are easily distinguishable among the other red-breasted Plovers by additional bands or patches of black on the breast or belly, and by other well-defined characters. These may, therefore, be dismissed from the present inquiry.

Of the four remaining species, all of which, in summer, have a single band of rufous across the breast, two belong to the *Eudromias*-type, two to *Ægialitis*. It is with respect to these four that so much confusion has arisen, partly on account of the peculiarity referred to, partly because too general a description of one has been applied in turn to each of the others. In endeavouring to clear away this confusion and rectify the synonymy, the most convenient course will be to examine the four species in pairs. I will therefore commence with *E. asiaticus* and *E. veredus*, reserving for another paper the comparison of *Æ. geoffroyi* and *Æ. mongolicus*; and it may be observed by way of preface that the four names just specified are those which, I believe, are entitled to priority for the four distinct species to which I now proceed to apply them.

3. EUDROMIAS ASIATICUS. (Plate V.)

Charadrius asiaticus, Pall. Reise, ii. p. 715 (1773); Lath. Synopsis, iii. p. 207 (1785); *Id.* Ind. Orn. ii. p. 746 (1790);

* I omit *E. montanus* (Townsend): for this species never assumes, at any season, a rufous pectoral band.

Gmel. Syst. Nat. ii. p. 684 (1788); Bree, B. Eur. iv. p. 18 (1862); Schlegel, Mus. P.-B. *Cursores*, p. 38 (1865).

Charadrius caspius, Pallas, Zoogr. R.-A. ii. p. 136, pl. 58 (1811).

Charadrius jugularis, Wagler, Syst. Av. fol. 5, p. 5, no. 39 (1827); Démidoff, Voy. Russ. Mérid. iii. p. 233 (1840).

Eudromias asiaticus, Keyserl. & Blas. Wirbelth. Eur. p. 208 (1840); G. R. Gray, List B. Brit. Mus. *Grallæ*, p. 68 (1844); Heuglin, Syst. Uebers. Vög. N-O. Afrika's, p. 57 (1856).

Charadrius damarensis, Strickland, Contrib. Orn. 1851, p. 148.

"*Charadrius gigas*, Brehm" (*fide* Bonap. Comp. Rend. 1856, p. 417).

Morinellus caspius, Bonap. Comp. Rend. 1856, p. 417.

Cirripedesmus asiaticus, Gould, Handb. B. Austral. ii. p. 229 (1865).

Morinellus asiaticus, Degl. & Gerbe, Orn. Eur. ii. p. 132 (1867).

Hab. Northern China (*Swinhoe*); Tartary and the shores of the Caspian sea (*Pallas*); Russia (*Radde*); Odessa (*Nordmann*); Heligoland (*Blasius*); Altai Mountains (*Mus. Brit.*); Palestine, Bay of Acre (*Tristram*); Red-Sea shore (*Heuglin*); Abyssinia (*Blanford*); South Africa (*Van Horstock*); Colesberg, Cape Colony (*Layard*); Damaraland (*Andersson*); Orange River (*Verreaux*); Algoa Bay (*Mus. Brit.*).

DESCRIPTION.—*Adult, in summer.* Bill black, moderately long, slender; crown, nape, the whole of the back, and wings above hair-brown*. Forehead, eyebrows, eyelids, sides of the face, and throat pure white. Across the breast a broad rufous band, the lowest feathers of which, in some specimens, are terminated by dark umber-brown; thence to the extremities of the under tail-coverts, pure white. Primaries brownish black, the shafts of all mesially white. Secondaries long, extending nearly to the end of the primaries. Axillaries white. Tail moderately long; the outer feather on each side smoke-grey; the others darker in colour as they approach the middle (in immature birds each margined at the extremity with white). Legs long and slender; a considerable portion of the tibia bare. Toes three,

* Syme's 'Nomenclature of Colours.'

placed anteriorly; the middle and outer toe of each foot connected at their base by a slight membrane. Legs and toes greenish-ochreous. The sexes similar.

Adult, in winter. Crown, nape, whole of the back, and wings above as in summer, but somewhat paler in colour. No rufous pectoral band, but in lieu thereof a patch of dusky-grey on each side of the breast. The rest of the under parts pure white. Legs and toes paler than in summer.

Young. Crown, nape, whole of back, and wings above hair-brown, each feather margined with buff. The parts which in the adult are white, tinged with buff. The pectoral band presents a mottled appearance, each feather being light brown, margined with light buff. Primaries and axillaries as in the adult; secondaries edged with buff. Legs and toes pale horn-colour.

Dimensions. Total length 7·5 inches; bill ·8; wing 5·5; bare part of tibia ·7; tarsus 1·5; middle toe ·8.

Pallas, who first noticed this species in his travels through the Russian empire, described it as a rare and solitary bird; and it was not until many years later that its appearance was again noted by other observers. Even Middendorff and Radde, who went over a portion of the same ground, did not meet with it; and that it was not inadvertently overlooked by Middendorff may be assumed from his remark that it is easily distinguishable from *Ægialitis mongolicus* by its longer tarsus*. The pages of Von Schrenck's 'Reisen im Amurlande' afford no information with regard to this species; and on turning to the works of Pallas's contemporaries, Latham and Gmelin, we find that they have merely copied his original description. Subsequently Pallas identified the *Charadrius caspius* of his 'Zoographia' (ii. p. 136.) with the *C. asiaticus* of his former work; and thus the matter stood until 1827, when Wagler published his 'Systema Avium.' In this volume he described a Plover under the head of *Charadrius jugularis*, which he identified with the present species.

As regards the *Charadrius xanthochilus* of Wagler (*op. cit.* no. 36) various opinions have been expressed. Some, who have

* Sibirische Reise, Band ii., 2, 1, p. 211. St. Petersburg: 1851.

considered *E. veredus* (Gould, P. Z. S. 1848, p. 38) to be identical with *E. asiaticus* (Pallas), have added *C. xanthochilus*, Wagler, as a synonym. Others, treating the two former as distinct, have referred Wagler's description to Mr. Gould's *veredus*. The former view has been supported by Mr. Blyth (Ibis, 1865, p. 34); the latter has been adopted by Mr. G. R. Gray* (*ut supra*) and by Bonaparte (Compt. Rend. 1856, p. 417). Professor Schlegel (Mus. P.-B. *Cursorès*, p. 50) considers *C. xanthochilus*, Wagler, to be identical with the Asiatic Golden Plover, the *C. orientalis* of the 'Fauna Japonica.' In this view Mr. Gould formerly concurred; but in his 'Handbook to the Birds of Australia' (ii. p. 226), he says that upon a reconsideration of the subject he finds it impossible to determine to what species the name of *xanthochilus* was assigned.

Under these circumstances it becomes a matter of some little interest and importance to identify the bird described by Wagler. Turning to his description, I find the words "Corpore supra fusco, pluma quavis *auréo-flavo-marginata*, subtus albo, nisi pectore obscure fuscescente." Now these characters cannot apply to either *E. asiaticus* or *E. veredus*; for neither of these birds at any age have the feathers on the upper portions of the plumage margined with golden-yellow. But the words above quoted, as it seems to me, are an accurate description of one of the Golden Plovers in winter plumage; and I have no doubt that the opinion formerly expressed by Mr. Gould and shared in by Prof. Schlegel (as quoted) is correct, and that Wagler's bird is the *Charadrius orientalis* of the 'Fauna Japonica,' to which species, however, the older names *C. fulvus*, Gmelin†, and *C. longipes*, Temm., belong. Under these circumstances, *C. xanthochilus*, Wagler, should be expunged from the list of synonyms of both *E. asiaticus* and *E. veredus*.

* It is but fair to state that this opinion was formed in 1844, when the British Museum was not so rich in ornithological specimens as at present. From a more recent investigation of a larger series, Mr. Gray now informs me that he considers *C. xanthochilus*, Wagler, to be distinct from *E. veredus*, and synonymous with *C. fulvus* of Latham and Gmelin, which, it will be seen later, is the Asiatic Golden Plover.

† Concerning this species also very different opinions have been expressed.

In giving "*Charadrius gigas*, Brehm," as a synonym of *E. asiaticus*, I have adopted the opinion of Bonaparte (*l. c.*), not being acquainted with Dr. Brehm's description*. Prof. Schlegel is wrong in giving *C. montanus*, Townsend, as a synonym of *C. asiaticus* (Mus. P.-B. *Cursores*, p. 38); and Mr. Layard makes the same mistake (B. S. Afr. p. 299). The bird to which they refer is the Mountain-Plover of America, a rare species in collections, and one which never assumes at any season a rufous colour on the breast†.

The bird described from Damaraland by Strickland (*l. c.*), to which he gave the provisional name of *C. damarensis*, is undoubtedly the young of *E. asiaticus*, as I have ascertained by examination of the type-specimen, now in the Cambridge Museum.

Temminck (Man. d'Orn. ii. p. 539), by mistake, gave *C. asiaticus* and *C. caspius*, Pallas, as synonyms of *E. morinellus*. The *C. asiaticus* of Horsfield (Trans. Linn. Soc. xiii. p. 137) is *Ægialitis geoffroyi*, Wagler (*C. leschenaulti*, Lesson); so also is the *C. asiaticus* of Mr. Tristram (P. Z. S. 1864, p. 450‡). These species I shall have occasion to mention again presently in connexion with the localities assigned to the bird described by Pallas. It is, perhaps, not unnecessary to add that in placing the present species in the restricted genus *Eudromias*, which was founded by Boie in 1822, I have followed Mr. G. R. Gray and Mr. Gould (*ut suprâ*) in considering it, both in structure and in the character of its plumage, most nearly allied to the true Dotterels.

The specimens of *E. asiaticus* which were procured by Pallas about the salt-lakes in the southern deserts of Tartary, were all

* [We cannot say where the original description is to be found, unless it be that given by Dr. Brehm in his 'Vogelfang' (p. 283) as follows:—"*Ægialitis gigas*, Alfr. et Lud. Brm. Er ist noch mehr als ein Mal so gross, als jeder der vorhergehenden, 8" 6''' lang, oben aschgrau erdfarben, unten weiss mit einem grauen, in der Mitte schmalen Halbringe am Kropfe. Wird sich von Suez nach Osteuropa verirren."—ED.]

† Cf. Townsend, "Description of twelve new species of Birds, chiefly from the vicinity of Columbia River," Journ. Ac. N. S. Philad. 1837, p. 192, and also Elliot's 'Birds of North America,' where a good figure of this species is given (ii. pl. 39).

‡ See also 'The Land of Israel,' pp. 92, 372.

in full summer plumage, and the birds were not in flocks; whence it may be inferred that the species was here discovered in its breeding-haunts.

No subsequent traveller, however, in these regions has yet established the fact, and the eggs still remain undescribed. Like other species of *Limicolæ*, this Plover, impelled by curious instinct, migrates southward at the approach of winter; and the observations of modern naturalists show that it has a very extensive range. Its usual line of migration appears to be by the Red-Sea shore and Abyssinia, to South and South-west Africa. Nevertheless stragglers from the main body are occasionally carried out of their course, and are found considerably to the westward of this line. Hence it is that this species has come to be included in the European avifauna. Specimens procured in Russia, on the shores of the Caspian Sea, are in the museum at St. Petersburg and the British Museum.

Prof. Nordmann states (Voy. Démid. Russ. Mérid. iii. p. 233) that in April 1836 a single example was obtained near Odessa. The furthest point westward at which this species has been found is Heligoland, where a solitary example was killed 16th Nov. 1850, for which remarkable fact we have the authority of Prof. Blasius (Naumannia, 1858, p. 425, translated Ibis, 1862, p. 71), who, referring to this specimen in the collection of Herr Gätke, observes that it is "a young bird which undoubtedly belongs to this species, and not to *C. pyrrhоторax*, Temminck." It is therefore quite possible that on some future occasion the bird may occur in England.

To the eastward of what may be considered its home, *E. asiaticus* strays into Northern China, where, however, it would appear to be by no means common. It will probably be found in Thibet and Mongolia. Strange to say, it is unknown to ornithologists in India, where two other red-breasted Plovers are common, *Æ. geoffroyi* (Wagler) which, as before stated, is the bird which Horsfield mistook for *E. asiaticus* (Pall.), and the smaller *Æ. mongolicus* (Pall.), which is perhaps better known as *Æ. pyrrhоторax* (Temm.).

The species obtained in Palestine by Mr. Tristram, and referred by him (P. Z. S. 1864, p. 450) to *E. asiaticus* (Pall.),

proved to be *Æ. geoffroyi* (Wagl.) as pointed out by Mr. Blyth (Ibis, 1867, p. 163). This rectification Mr. Tristram subsequently acknowledged (Ibis, 1868, p. 323) at the same time adding, "To my former list (P. Z. S. 1864, p. 450) I must now add the true *Charadrius asiaticus* of Pallas, of which I shot a specimen on the shore near Acre in winter, where *C. pyrrhothorax* was pretty common, and, especially near the Kishon, generally in company with larger flocks of the universal *Ægialites cantianus*."

Rüppell does not include the present species in his 'Systematische Übersicht der Vögel Nord-Ost Afrika's'; but Dr. von Heuglin states (*ut supra*) that it is found in winter on the Mediterranean and Red-Sea shores.

Mr. Blanford, who accompanied the late expedition to Abyssinia, brought home two young birds which he procured in that country, and kindly forwarded for my inspection. After a careful examination, I have no hesitation in pronouncing them to be the young of *E. asiaticus*. They were procured in August 1868—one at Massowa, the other at Rairo in Habab, at an elevation of 3000 feet above the sea-level, where the species was found in flocks on open grassy ground. In their general appearance they much resemble the young of *E. morinellus*, but differ in having a longer bill, the forehead white, the shafts of the primaries mesially white, the axillaries white. In *E. morinellus*, the forehead is always mottled, the shaft of the first primary only white, the axillaries pale buff. In the young of *E. veredus*, to which I shall refer more particularly hereafter, although the forehead is white or buffy-white, the shafts of the first two primaries are white, the axillaries smoke-grey. *Æ. geoffroyi* possesses different characters, again, as also does *Æ. mongolicus*, which serve to distinguish both these from the young birds obtained by Mr. Blanford.

Eudromias asiaticus is included by Mr. Layard in his 'Birds of South Africa,' specimens having been procured near Colesberg. From this locality Mr. Arnot forwarded three of these birds to Mr. Layard with a note to the effect that they were found together in flocks of fifteen or twenty, very far away from water; they were scarce, and only seen after showers of rain, which bring out small *Coleoptera* and animal life of that sort, on which they seem to feed, and get enormously fat.

The late Mr. C. J. Andersson procured numerous specimens of *E. asiaticus* in South-west Africa, several of which are now before me. In his MS. notes, now in the possession of Mr. Gurney, who has kindly referred to them at my request, he speaks of this species as appearing in Damaraland in small flocks occasionally, and as varying a good deal in size; but he does not think that this variation is sexual. The specimens formerly in his collection, and now in my own, were procured at Otjimbingue (Damaraland), Ondonga (Ovampo), and Knysna, in the months of November, December, and January.

M. Verreaux found this species on the Orange River; and a specimen from Algoa Bay is in the British Museum. Other examples, procured in South Africa by Van Horstock, are in the Museum at Leyden.

It will thus be seen that *Eudromias asiaticus* has a very extensive range; and in these days of rapid locomotion, when naturalists have such great facilities for reaching little-known countries, it is to be hoped that some enterprising ornithologist will investigate the breeding-habits and economy of this bird, and so complete the history of one of the most beautiful of the group of Plovers.

4. EUDROMIAS VEREDUS. (Plate VI.)

Cursorius isabellinus, Horsfield, Trans. Linn. Soc. xiii. p. 137 (1820) (*nec* Temm.).

Charadrius veredus, Gould, P. Z. S. 1848, p. 38; *Id.* B. Austral. vi. pl. 14.

Eudromias xanthochilus, G. R. Gray, List B. Brit. Mus. Grallæ, p. 68 (1844) (*nec* Wagl.).

Pluvialis xanthochilus, Bonap. Compt. Rend. 1856, p. 417.

Charadrius xanthochilus, Blyth, Ibis, 1865, p. 34.

Cirripidesmus asiaticus, Gould, Handb. B. Austral. ii. p. 229 (1865).

Hab. Japan (*Mus. Brit.*); China, Shanghai (*Reeves*, teste *Gould*); Celebes, Macassar (*Wallace*); Java (*Horsfield*, *Wallace*); Ternate (*Bernstein*); Amboyna (*Mus. Lugdun.*); New Guinea, Aru Islands (*Wallace*); Australia, Port Essington (*Gilbert*, teste *Gould*); Queensland (*Mus. J. E. H.*); Bampton Shoals (*Kreffl*); New South Wales, Sydney (*Strange*, teste *Gould*).

DESCRIPTION.—*Adult, in summer* (hitherto undescribed). Bill black, moderately long, slender. Crown and upper portion of the back and wings hair-brown. Forehead, eyelids, and chin pure white. Eyebrows, and sides of the face and neck, buff; the latter colour extending round the nape, and separating the hair-brown of the crown from that of the back. Across the breast a broad rufous band, the lowest feathers of which are terminated by a slight edging of dark umber-brown; thence to the extremities of the under tail-coverts pure white. Primaries brownish-black; the shaft of the first, and a portion of the second, white; the shafts of the others brown. Secondaries long, reaching almost to the end of the primaries. Axillaries smoke-grey. Tail long, the outer web of outermost rectrix white; its inner web dusky. In the second rectrix both webs dusky, the inner one darker. The rest of the rectrices getting darker as they approach the middle; the two middle the darkest and somewhat longer than the others. Legs long and slender; a considerable portion of the tibia bare. Toes three; the middle and outer toe connected at their base by a slight membrane. Legs and toes yellowish-ochreous (*Exempl. in mus.* J. Gould).

Adult, in winter. No specimens have yet been reported; but we may presume from what occurs in the allied species, *E. asiaticus*, that the winter plumage of this bird resembles, to a certain extent, the immature plumage next to be described, except that the chin and under parts are probably pure white, instead of dusky; and a dusky patch on each side of the breast doubtless takes the place of the rufous band which is seen across the breast in summer.

Young. Crown, back, and upper portion of the wings greyish-brown, each feather margined with buff. Forehead, eyebrows, chin, sides of face and neck buff, this colour extending in the form of a collar round the neck. The pectoral band not well defined; but a cloudy patch of pale buffy-brown, extending across the breast, becomes gradually paler above and below as it approaches the chin and vent. Primaries and axillaries as in the adult; secondaries broadly edged with buff. Legs and toes dull yellowish-brown. (*Exempl. in mus.* J. E. H.)

Dimensions. Total length 8·5 inches; bill 1; wing 6·5; bare portion of tibia ·8; tarsus 1·8; middle toe ·9.

Hitherto this bird has generally been considered to be the young of *E. asiaticus* (Pall.); but as it differs materially from that species in several important particulars, I can only suppose that such a conclusion was arrived at from descriptions, and not from an actual comparison of specimens.

When Mr. Gould described it for the first time, in 1848 (*ut suprâ*), he had no adult specimens before him—those which he exhibited from North Australia being young birds, in the brown plumage which is peculiar to all the true Dotterels.

In this same stage of plumage were all the specimens procured in Java by Horsfield, and in that island, Celebes, and the Aru Islands by Mr. Wallace, in New South Wales by Gilbert, and on the Bampton Shoals, as mentioned, by Mr. Krefft. Hence, until the adult bird had been obtained, it was almost impossible to arrive at any sound conclusion as to its specific characters; and Mr. Gould has very candidly remarked, in his 'Handbook to the Birds of Australia' (*l. c.*), that this bird has been a stumbling-block to all ornithologists, himself included, from the time he first described it to the date of this remark.

A specimen in full summer-plumage has at length been obtained, and gives a solution of the difficulty. This specimen was procured at Shanghai by Mr. Reeves, and was forwarded by him to Mr. Gould, who has kindly lent it to me, with leave to figure it in illustration of the present paper.

It frequently happens that a general description may apply to two or more allied species, and doubts may in consequence be thrown upon a newly described species from the inability of the reader to distinguish it from an allied form already well known. Under these circumstances the difficulty may be got over by presenting the reader with a good coloured figure; and the present may be taken as a case in point. On comparing the two plates (Pls. V. and VI.) it will be seen that there is a striking general resemblance between *E. asiaticus* and *E. veredus*, and that the two species are evidently closely allied. Nevertheless there are certain characters, constant in each, and sufficient to enable them to be separated without difficulty.

A glance at the respective measurements will show that *E. veredus* is much superior in size. In length it exceeds *E. asiaticus* by an inch. The wing is an inch longer, and the tarsus is more elongated by three-tenths of an inch.

The more important respects in which these two species differ may perhaps be best shown as follows:—

<i>Eudromias asiaticus.</i>	<i>E. veredus.</i>
<i>Bill</i> shorter and more slender.	longer and stouter.
<i>Forehead</i> white; white line over the eye.	buffy white; buff line over the eye.
<i>Chin</i> and sides of face white.	white; sides of face buffy-white.
<i>Pectoral band</i> rufous, terminating abruptly at the sides.	rufous, inclining to buff at the sides, and extending entirely round the neck.
<i>Wing</i> an inch shorter.	an inch longer.
<i>Primaries</i> almost black; the shafts of all mesially white.	dusky; the shafts of the first two only, white.
<i>Axillaries</i> white.	smoke-grey.
<i>Rectrices</i> (12): the outer feather dusky, the extremity in young birds margined with white.	in the outer feather, the outer web and basal end of inner web white.
<i>Tarsus</i> shorter by .3 in., more slender and greenish-ochreous.	longer by .3 in., stouter, and yellowish-ochreous.
<i>Tibia</i> : bare portion shorter by .2 in.	bare portion longer by .2 in.

Mr. Blyth, in looking over the type-specimens of Javan birds described by the late Dr. Horsfield (*l. c.*), found the *Cursorius isabellinus* of that author to be identical with *E. veredus*, Gould! and announced this fact in 'The Ibis' for 1865 (p. 34), adding his opinion that the latter was synonymous with *C. xanthochilus* of Wagler, which, as I have above shown, cannot be the case.

Looking to the fact that the only specimen of this bird in the adult plumage hitherto reported was procured in China, where it was considered a rarity, and that all the examples from Australia and the Malay Archipelago have proved to be immature, I conclude that the species is Asiatic, rather than Australian as has been supposed, and that its true home will probably be found to be Mongolia and Mantchuria, perhaps even further to the north, and that the appearance of so many immature examples south of the equator may be accounted for by supposing that *E. veredus*, like many other species, is affected by the same mi-

gratory influence which impels the young to wander southwards at the approach of winter.

In presenting to the readers of 'The Ibis' all the information which I have been able to collect with reference to this rare and interesting bird, I must take the opportunity of expressing my obligations to Mr. G. R. Gray for the kind assistance which I have received from him; and in acknowledging the use which he has accorded me of all the specimens of *E. asiaticus* and *E. veredus* in the British Museum, I am glad to be able to add that he recognizes the result of my labours, and agrees with me in considering *Eudromias veredus* to be a good species.

XVI.—On the Oriolidæ of the Ethiopian Region.

By R. B. SHARPE, F.L.S.

(Plates VII., VIII.)

THE following sketch of the Orioles of Africa has been suggested to me during a recent study of the species in my collection; and as my series is extensive, I trust I may be able to throw some light upon the synonymy of the different species, some of which are involved in considerable obscurity. Mr. Gray's 'Hand-list of Birds' indicates ten species of African *Oriolidæ* as having been distinguished by modern authors. This is very nearly correct; but he has omitted *Oriolus crassirostris*, Hartl., apparently a very good species, and he has included *O. moloxita*, Rüpp., as distinct from *O. monacha* (Gmel.), to which I think it may be undoubtedly referred.

I am by no means certain that the results arrived at in the present paper will be acquiesced in by all ornithologists; but I have done the best with the material at my command, and I can only regret that so few of the specimens examined by me have had the sexes accurately determined by collectors. In birds which vary so much as Orioles in passing from the young to the adult stages it is a matter of great importance to know the sexes of specimens; and if collectors would only think of the additional value which information on this point confers on their treasures,

they would, I feel sure, more often append a short note, instead of being satisfied with the mere preservation of the skin.

I have adhered in the present essay to the same form of diagnostic table as in my former contributions, notwithstanding that I have received from a few ornithologists sundry objections to this way of distinguishing species. But, in my opinion, it is the very best way of submitting them to a crucial test, as it exacts the definition of some tangible character by which the species may be distinguished from all others; and this style of diagnosis is particularly applicable in the case of African birds, where often so many races of the same bird exist, differing in nothing but size, races which can only be distinguished as *major* and *minor*. These species cannot be shown in a diagnostic table, and are at once resolved into their position of larger and smaller races of the same species, which I believe to be their proper status in the ornithological system.

As far as I can perceive, there are *nine* species of *Oriolidæ* inhabiting the Ethiopian Region; and they are all referable to the genus *Oriolus**. Of these I have examined all but one, namely *O. crassirostris*, Hartl., which is only known by the type in the Bremen Museum. Dr. Finsch, however, has most kindly sent me a description of the bird, and added at the same time some valuable notes, to which I shall refer in the body of the paper. I am greatly indebted to Lord Walden and Mr. Blanford for the loan of specimens, and to Mr. Gray for allowing me free opportunities of examining the species in the British Museum.

The African *Oriolidæ* may be divided into two sections:—(1) with the head black—*Baruffius*, Bp.; and (2) with the head orange—*Oriolus*, L. No difference in structure can be found between the types of these two groups; and the so-called genus *Baruffius* is evidently one of those which were so often established by its author on a difference of plumage alone. The following diagnostic table may be of use in determining the various species of African Orioles:—

* The genus *Oriolia*, Isid. Geoffr. (*cf.* Hartl. Orn. Madag. p. 43) is founded on *Oriolia bernieri*, which is said by Prof. Schlegel to be an *Artamia*, and is figured as *A. bernieri* (Faun. Madag. Ois. p. 86, pl. 25) from the original specimen in the Paris Museum.

- a. pileo aureo,*
a'. rectricibus externis ad basin nigris,
a''. tectricibus alarum nigris 1. *galbula.*
b'. tectricibus alarum nigris, late flavo mar-
ginatis 2. *auratus.*
b'. rectricibus externis omnino aureis 3. *notatus.*
- b. pileo nigro,*
a'. speculo alari albo,
a''. rectricibus externis omnino flavis 4. *monacha.*
b'. rectricibus externis ad basin nigris,
a''' . rostro robustissimo 5. *crassirostris.*
b''' . rostro gracili,
a'''' . major: supra læte olivascenti-aureus 6. *larvatus.*
b'''' . conspicue minor: supra saturate oli-
vaceus 7. *brachyrhynchus.*
b'. speculo alari albo nullo 8. *nigripennis.*

1. ORIOLOUS GALBULA.

Oriolus galbula, Linn.: Rüpp. Syst. Übers. p. 61 (1845): Hartl. Orn. Westafr. p. 80 (1857): Heugl. Ibis, 1859, p. 341; Peterm. Geograph. Mittheil. 1861, p. 23; J. f. O. 1861, p. 163; Orn. N.-O. Afr. i. p. 400: Hartl. Faun. Madag. p. 43 (1861): Gurney, Ibis, 1865, p. 268: Schl. Mus. P.-B. *Coraces*, p. 99 (1867): Layard, B. S. Afr. p. 135. (1867): Heugl. J. f. O. 1868, p. 323: Chapman, Trav. S. Africa, ii. p. 397 (1868): Gray, Hand-l. B. p. 291 (1869).

O. pileo aureo: rectricibus externis ad basin nigris: tectricibus alarum nigris.

Hab. in Europâ, et in totâ regione Æthiopicâ.

Adult male. Above rich golden-yellow: wing-coverts black, the cubital coverts with a narrow tip of yellow; primary coverts black, broadly edged with yellow, forming a conspicuous spot; quills black, lighter underneath, the secondaries edged towards the tip with yellowish-white; tail black, the middle feathers entirely of this colour, with a spot of yellow at the tip, all the other feathers black at the base, yellow towards the tip, the outer feathers having more yellow than black; a spot between the base of the bill and the eye black; entire under surface golden-yellow; bill reddish-brown; feet black. Total length 9 inches, of bill from front 1, from gape 2·2, wing 5·9, tail 3·1, tarsus ·8, middle toe ·7, hind toe ·4.

Adult female. Golden-yellow above, tinged with olive-green; quills and wing-coverts brownish-black tinged with olive-green; tail-feathers marked as in the male, but the feathers olive-green, blackish towards the tip; throat and breast grey, with black stripes; flanks bright yellow, with fainter stripes; loreal spot indistinct, dusky; bill brownish-red; feet black. Total length 9·5 inches, of bill from front 1, from gape 1·2, wing 5·9, tail 3·3, tarsus ·8, middle toe ·7, hind toe ·4.

Europe; North-Eastern Africa (*Heuglin*); Western Africa, Casamanze (*Verreaux*); Natal (*Ayres*); Damara Land (*Andersson, Chapman*); Madagascar (*Hartlaub*).

I have, of course, not entered every bibliographical reference to the present bird in the list above given, but have selected those only which bear upon its occurrence in the Ethiopian region. The descriptions above given are those of a fine pair shot near Paris by Mr. Harting on the 1st of June 1868. Another bird in my collection, shot by Andersson at Ondonga, in the Ovampo Country, on October 30th, 1866, is lighter underneath, with the black stripes much more distinct. Mr. Andersson has not determined the sex; but it would seem to be a young male, as it agrees very well with another specimen from France, so marked in my collection.

2. ORIOLUS AURATUS.

Le Loriodor, Levaill. Ois. d'Afr. t. 260.

Oriolus auratus, Vieill. N. Dict. d'H. N. xviii. p. 194 (1817): Gal. Ois. t. 83 (1825): Swains. B. W. Afr. ii. p. 33 (1851): Bonap. Consp. Av. i. p. 348 (1850): Cab. Mus. Hein.i. p. 209 (1850): Hartl. Beitr. Orn. Westafr. p. 23 (1852); J. f. O. 1854, p. 24: Müll. J. f. O. 1855, p. 393: Sundev. Crit. Levaill. p. 53 (1857): Antin. Cat. Ucc. Affr. C.-N. p. 44 (1864): Schl. Mus. P.-B. *Coraces*, p. 101 (1867): Hartm. J. f. O. 1867, p. 94: Heugl. J. f. O. 1867, p. 203; J. f. O. 1868, p. 324; Orn. N.-O. Afr. i. p. 401: Gray, Hand-l. B. p. 291 (1869).

Le Lorient bicolor, Temm. Cat. Syst. Cab. d'Orn. pp. 46, 202 (1807).

O. bicolor, Licht. Verz. Doubl. p. 20 (1823): Hartl. Orn. Westafr. p. 80 (1857); J. f. O. 1861, p. 163: Monteiro, P. Z. S. 1865, p. 93.

O. chryseos, Heugl. Syst. Uebers. no. 294; Naumannia, 1857, p. 433.

"*O. icterus*, Pr. Paul Würt. Icon. ined. no. 50" (*teste* Heuglin, J. f. O. 1867, p. 299).

O. capite aureo: rectricibus externis ad basin nigris: tectricibus alarum nigris, late aureo marginatis.

Hab. In Africâ occidentali necnon in Abyssiniâ.

Adult male. Above very rich golden-yellow, a little lighter on the rump; least wing-coverts entirely yellow; lesser wing-coverts black at the base and very broadly edged with yellow, so that the black scarcely shows, the feather nearest the edge of the wing entirely black; primary coverts black, with a few of the smaller feathers tipped with yellow; quills black, light grey underneath—the innermost secondaries broadly, the outer ones more narrowly edged with yellow; primaries with a narrow white edging tinged with yellow; middle tail-feathers black with a yellow tip, the next two on each side black with a little broader edging of yellow, the next feathers for the most part yellow till the last, which are black only at the base; a line of black feathers from the base of the bill to the extremity of the ear-covert, encircling the eye; entire under surface of the body rich golden-yellow; bill brownish-red; feet black. Total length 9 inches, of bill from front 1·1, from gape 1·3, wing 5·5, tail 3·3, tarsus ·75, middle toe ·7, hind toe ·4.

Adult female. Similar to the male, but with the upper surface tinged with olive-green, the rump alone being bright yellow; the quills more dusky-black, and the tail-feathers tinged with olive, where they are black in the adult male; throat and breast whitish, sides of the body, flanks and abdomen yellow, the whole striped with longitudinal lines. Total length 9 inches; bill from front 1·2, from gape 1·35; wing 5·5; tail 3·4; tarsus ·8; middle toe ·7; hind toe ·4.

Young male. Similar to the female, but brighter in colour, the underparts all yellow and the longitudinal stripes more indistinct; bill blackish. Total length 8·5 inches, of bill from front 1·05, from gape 1·3, wing 5·4, tail 2·9, tarsus ·75, middle toe ·75, hind toe ·4.

Senegambia; Casamanze; Bissao (*Verreaux*); Gambia (*mus*).

R. B. S.); Niger (*Thomson*); Angola (*Perrein*); North-eastern Africa (*Heuglin*).

3. *ORIOLOUS NOTATUS*. (Plate VII. fig. 2.)

Oriolus notatus, Peters, J. f. O. 1868, p. 132 : Cab., Van der Deck. Reis., Vögel, iii. p. 33 (1869) : Gray, Hand-l. B. p. 391.

O. auratus, Gurney, P. Z. S. 1864, p. 2 : Andersson, P. Z. S. 1864, p. 6 : Layard, B. S. Afr. p. 135 (1867) : Chapman, Trav. S. Africa, ii. p. 397 (1868) (*nec Vieill. ut suprâ*).

O. anderssoni, Bocage, Jorn. Sc. Lisboa, 1870.

O. capite aureo : rectricibus externis omnino aureis.

Hab. In Africâ meridionali et orientali.

Adult male. Above rich golden-yellow, a little paler on the scapularies; least wing-coverts yellow, with a black shaft down the centre of the feather; cubital coverts black with a broad margin of yellow; primary coverts black at the base, with a yellow edging gradually getting broader towards the tip; quills black, greyish on the underside, secondaries margined with yellow and the outer primaries with white; middle tail-feathers black, with a yellow tip, the two next to the middle tail-feathers black at the base and for the greater part of the inner web, the four outer tail-feathers yellow; a black streak from the base of the bill, passing through the eye and produced to the extremity of the ear-covert; entire under-surface rich golden-yellow; bill brownish-red; feet black. Total length 8 inches, of bill from front 1·1, from gape 1·2, wing 5·4, tail 3·1, tarsus ·8, middle toe ·7, hind toe ·35.

Mozambique (*Peters*); Mombas (*Van der Decken*); Damara and Ovampo Land (*Andersson*); Angola (*Anchieta*).

This very distinct species was described by Professor Peters from a Tette specimen; but, so far as I can see, the Damara bird belongs to the same species. It forms one of the section of the genus *Oriolus* with the head golden-yellow, and is allied to *O. kundoo*, *O. galbula*, and *O. auratus*, from all of which, however, it is at once to be distinguished by the four outer tail-feathers being entirely yellow. From the first two it is also distinguishable by the yellow edging to the wing-coverts, which in those two species are entirely black; and although *O. auratus* approaches

it in also possessing these yellow margins, the colour of the tail at once separates the South-African species.

There can be little doubt that the bird identified by Messrs. Gurney, Andersson, Layard, and Chapman as *Oriolus auratus* is really the present species ; and therefore the following observations refer to it. Andersson (*l.c.*) gives the following note on its habits :—

“ I have only once or twice observed this splendid Oriole in the southern parts of Damara Land—that is, the mature bird. The young (at least I believe it to be the same bird) is pretty common, but only during the rainy season ; for it is migratory. The old bird is extremely shy and wary, and always keeps to the thickest part of the jungle. On and in the neighbourhood of the Okavango River it is, however, more abundant, but still retains its shy habits. In the young bird the iris is brown, legs lead-colour, bill reddish-brown.”

Mr. Chapman (*l.c.*) records both this species and *O. galbula*, and observes :—

“ Both these species are to be met with during the rainy season, but they are chiefly young birds. The adults are rarely met with, and are always excessively wary and shy in their habits, either keeping to the loftiest trees, or the most secluded thickets. At a distance the two species are easily confounded, and the young still more so.”

Mr. Layard (*l.c.*), curiously enough, notices the discrepancy between the birds sent by Andersson from Damara Land and the description given by Dr. Hartlaub of *O. auratus*, but does not describe the South-African bird as new. When first I began to investigate the subject I fully believed that for once Levaillant had told the truth, and that in the present species we had the true *Loriodor* (Ois. d'Afr. t. 260). Levaillant distinctly states that the exterior tail-feathers of this bird were entirely yellow ; and the present species is the only South-African Oriole which I knew to possess this character. But on the other hand Levaillant states that all the outer tail-feathers, except the outermost one, are for the most part black, whereas in *O. notatus* the four exterior rectrices are entirely yellow. The allied Senegambian species, *O. auratus*, agrees exactly with Levaillant's figure

and description, except as regards this outer tail-feather, which has the base black; but this portion of the web is generally covered by the tail-coverts, and requires the attention of a more careful observer than we believe Levaillant to have been, to discover the black colour. I can therefore only follow Prof. Sundevall in considering Levaillant's *Loriodor* nothing more than the Gambian bird; and accordingly Vieillot's name must be employed in preference to that of Lichtenstein.

The description and measurements are taken from an adult male in my own collection from Ondonga, Ovampo-land, sent home by the late Mr. C. J. Andersson. The British Museum also possesses a fine specimen collected at Tette by Livingstone, which, coming from the same locality as the type, may almost be regarded as a typical specimen. I therefore give its dimensions along with those of the Damara bird.

			Long. tot.	Rostr.	Al.
1.	Tette,	Livingstone.	9	1.1	5.5
2.	♂ Ovampo,	Andersson.	8	1.1	5.2

The bird recently described by Prof. Barboza du Bocage (*l. c.*) as *O. anderssoni* is evidently of this species.

4. ORIOLUS MONACHA.

Moloxita ou la Religieuse d'Abyssinie, Montbeillard, Hist. Nat. Ois. iii. p. 405 (1775).

Nun Thrush, Lath. Syn. ii. p. 77 (1785).

Turdus monacha, Gmel. S. N. i. p. 824 (1788): Lath. Ind. Orn. i. p. 357 (1790).

Nun Oriole, Lath. Gen. Hist. B. iii. p. 142 (1822).

Oriolus monacha, Steph. Gen. Zool. xiii. p. 193 (1826).

O. monachus, Cab. Mus. Hein. i. p. 210 (1850): Heugl. J. f. O. 1868, p. 325; Orn. N.-O. Afr. i. p. 402: Gray, Hand-l. B. p. 292 (1869).

O. moloxita, Rüpp. Neue Wirbelth. Vög. p. 29, t. 12. fig. 1 (1835); Syst. Uebers. p. 65 (1845): Gray, Gen. B. i. p. 232 (1845): Bonap. Consp. Av. i. p. 347 (1850): Heugl. Syst. Uebers. p. 31 (1856): Schl. Mus. P.-B. *Coraces*, p. 108 (1867): Gray, Hand-l. B. p. 292 (1869).

O. pileo nigro: speculo alari albo: rectricibus externis omnino flavis.

Hab. in Abyssiniâ.

Head black, as also the entire throat, extending a little way down the breast; upper surface of the body olive-yellow, brighter on the nape, sides of the neck, and rump; wing-coverts olive-yellow, primary coverts black, white at the tip, forming a very distinct white alar speculum; quills black, very light grey on the underside, the inner secondaries olive-yellow on the outer web, the outer ones very light blue-grey; the primaries white on the basal portion of the outer web, and becoming light brown towards the apical portion; tail pure yellow, except the middle feathers, which are olive-green edged and tipped with yellow; under surface of the body bright-golden yellow; bill brownish-red; feet bluish-grey. Total length 9 inches, bill from front .9, from gape 1.1, wing 5.4, tail 3.1, tarsus .8, middle toe .8, hind toe .35.

Abyssinia (*Rüppell, Heuglin, Blanford*).

There can, I think, be little doubt as to the correctness of the above synonymy; and it must be borne in mind that Gmelin founded his species on the description of the *Moloxita* of Montbeillard (*l. c.*), who in his turn described it from a painting forwarded to him by the celebrated Bruce.

The description is taken from a female specimen very kindly lent me by Mr. Blanford, shot by himself at Antalo.

5. *ORIOLOUS CRASSIROSTRIS*.

Oriolus crassirostris, Hartl. Orn. Westafr. p. 266.

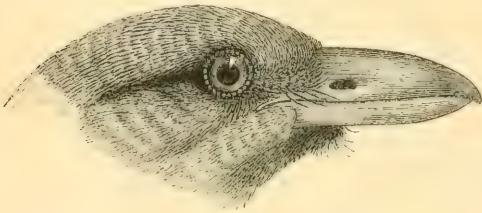
O. pileo nigro : speculo alari albo : rectricibus externis fere nigris : rostro robustissimo.

Hab. in insulâ Africæ occidentalis 'St. Thomas' dictâ (*Weiss, Mus. Brem.*).

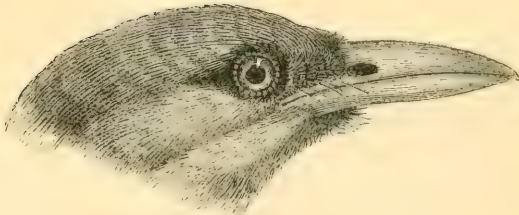
Not having seen a specimen of this bird, I am unable to give a detailed description. I wrote to Dr. Finsch to ask in what respect it differed from *O. larvatus*, and I in due time received an answer, from which I extract the following remarks:—

“*O. crassirostris* is distinguished from its nearest ally *O. larvatus* (1) by the extraordinary thick and broad bill, which resembles that of *Mimeta*; (2) the yellow on the tip of the outermost tail-feather is only 13 lines broad (in *O. larvatus* this colour reaches

nearly to the base) ; (3) the wing-coverts are dark greenish-grey, those on the carpal joint black with dark grey margins. I do not consider the whitish colour of the underparts to be a character, as these parts have evidently been yellow when the bird was alive, and this colour is lost from the specimen having been sent home in spirits. The tips of the tail-feathers and the under tail-coverts are still yellow, although less brilliant. Dr. Hartlaub's description is correct ; but I would add that the whole head, including the nape and the entire throat extending to the upper part of the breast, are black, exactly the same as in *O. larvatus*, the hinder part of the neck and the upper part of the mantle are yellowish-white, the remainder of the upper parts greyish olivaceous-green, the upper tail-coverts more distinct olive-green, like the innermost remiges of the second order, the primary coverts have a broad white apex (as in *O. larvatus* ; *maculâ alari parvâ albâ*, Hartl.). From *O. monacha*, Gm. (= *O. moloxita*, Rüpp.), it is also distinguished at a glance by the different colouring of the tail and by the larger and broader bill.



Oriolus crassirostris.



Oriolus larvatus.



	Long. Al.	Caud.	Rostr. a fr.	Rostr. ad bas.	Tarsi.
' <i>O. crassirostris</i>	4" 10" ⁸	3" 8"	11 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	12"
<i>O. larvatus</i> (S. Africa) . .	5"	3" 3"	11"	4 $\frac{1}{2}$ "	12" "

In addition to the foregoing remarks, Dr. Finsch sent me a sketch of the bill of the type-specimen of *O. crassirostris*, thus enabling me to give a representation of it along with that of *O. larvatus*.

I may add that Mr. Keulemans tells me that he shot a specimen of this fine Oriole in St. Thomas's Island.

6. ORIOLUS LARVATUS.

Le Lorient à masque noir, Temm. Cat. Syst. Cab. d'Orn. pp. 46, 203 (1807).

Oriolus larvatus, Licht. Verz. Doubl. p. 20 (1823): Bonap. Consp. Av. i. p. 347 (1850): Cab. Mus. Hein. i. p. 210 (1850): Hartl. Beitr. Orn. Westafr. p. 23 (1852); J. f. O. 1854, p. 24: Grill, Zool. Anteck. p. 34 (1858): Gurney, Ibis, 1860, p. 209: Monteiro, Ibis, 1862, pp. 335, 341; P. Z. S. 1865, p. 93: Schl. Mus. P.-B. *Coraces*, p. 107 (1867): Hartm. J. f. O. 1867, p. 95: Heugl. *tom. cit.* p. 203: Finsch, *tom. cit.* p. 247: Heugl. *op. cit.* 1869, p. 327; Orn. N.-O. Afr. i. p. 403.

Le Condougnan, Levaill. Ois. d'Afr. pl. 261.

O. condougnan, Temm. Rec. d'Ois. livr. 54 (1825).

O. capensis, Swains. Classif. B. ii. p. 237 (1857); B. W. Afr. ii. p. 37 (1837).

O. melanocephalus, Des Murs, Lefeb. Voy. Abyss., Zool. p. 169 (*nec* Linn.).

O. monachus, Wagl. Syst. Av. *Oriolus*, no. 7 (1827) (*nec* Gm.).

O. arundinarius, Burchell, Trav. S. Afr. i. p. 464; W. von Müll. J. f. O. 1855, p. 393.

"*Oriolus chloris*, Cuv." Hartl. Orn. Westafr. p. 81 (1857).

? *O. radiatus*, Gm. S. N. i. p. 384 (1788).

? *O.*, sp. indet., Kirk, Ibis, 1864, p. 318.

O. pileo nigro: speculo alari albo: rectricibus externis ad basin nigris, duabus intermediis olivaceis, duabus proximis ante apicem flavum nigris: major: supra late aureus.

Hab. in Africâ meridionali et in Abyssiniâ (nec in Africâ occidentali).

Adult male. Whole of the head deep glossy black extending down to the breast; nape and sides of the neck rich golden-yellow; whole of the back and scapulars bright yellow, with a slight olive tinge on the latter, and brighter yellow on the rump; wing-coverts black, but so broadly edged with yellow that the black does not show; the outermost cubital coverts edged with grey; the primary coverts black tipped with white, forming a distinct speculum; quills black, the inner web paler, especially in the secondaries; the secondaries broadly edged with yellow on the outer web, those nearest the primaries having also a margin of white, which in the primaries themselves entirely takes the place of the yellow, so that these are edged and tipped with pure white; tail-feathers for the most part yellow, black at the base; as they approach the middle feathers the black colour occupies the most part of the feather, being, however, strongly tinged with olive on those nearest the middle feathers, which are entirely olive-green; under surface of the body brilliant golden-yellow; bill brownish-red; feet black. Total length 9 inches; bill from front 1.1, from gape 1.4; wing 5.4; tail 3.2; tarsus .9; middle toe .8; hind toe .4.

Young male. Similar to the old male, but the colours not nearly so pure, with indistinct brown stripes on the feathers of the upper part of the body; head dusky brown; quills brown, edged exteriorly with lighter brown; breast with black longitudinal markings; tail darker olive-green.

Knysna (*Andersson*), Natal (*Ayres*), Angola (*Monteiro*), North-east Africa (*Heuglin*).

Dr. Hartlaub gives Senegambia as a habitat for this bird on Swainson's authority, and later authors have also assigned this locality for the bird on the same authority; but a careful perusal of the text shows that Swainson only gives a description of it for the sake of comparison with his *O. brachyrhynchus* (B. W. Afr. l. c.).

The *Oriolus radiatus* of Gmelin is very often referred to the

present species, in my opinion very erroneously, as in no stage of plumage can it be said to answer to the following characteristics :—" *alarum tectricibus remigibusque nigris margine albo*" or "*pedes flavi, ungues rubicundi*." The habitat of Gmelin's bird is unknown.

Var. minor.

Oriolus rolleti, Salvadori, Atti R. Accad. Torino, vii. p. 151 : Heugl. Orn. N.-O. Afr. p. 404 (1869).

O. personatus, Heugl. J. f. O. 1867, p. 203 ; 1868, p. 326.

O. brachyrhynchus, Schl. Mus. P.-B. *Coraces*, p. 108 (*nec Swains.*).

O. larvatus, Heuglin, Syst. Uebers. no. 292.

Abyssinia (*Brun-Rollet, Heuglin*), Angola (*Monteiro, Sala*).

In his work on the ornithology of North-eastern Africa, Dr. von Heuglin states that in a letter to him I said that I believed this race to be a distinct species from *O. larvatus*; but he misunderstood my words. I said that, not having seen an Abyssinian specimen, I could not say for certain, but that I was disinclined to join the two species, because I very much disliked uniting any two species without having personally examined the birds. I, however, wrote to Dr. Finsch on the subject, and he forwarded me the following reply :—

"Of this so-called species I have minutely compared the types in Turin and other specimens, also from the White Nile, in Vienna, and have already expressed my doubts in our work on the ornithology of Eastern Africa (also again in the Appendix). As regards the colours there is, indeed, no difference between it and the South-African *O. larvatus*; this you may depend upon; but commonly the measurements are not so large, the bill especially being a little shorter. I should have considered these differences of specific value, but for the fact that there are intermediate forms, which will not allow one to do so. *O. rolleti* is by no means a representative of *O. larvatus* in North-eastern Africa, as there are specimens as small from Angola and in the Leyden Museum from South Africa (*teste Schlegel*). I consider it therefore nothing more than a small race.

	Long. Al.	Caud.	Culm. a fr.	Tarsi.
" <i>O. larvatus</i> , South Africa . .	5 0	3 3	11	12
" Natal	5 1	3 5	11½	11
<i>O. rolleti</i> , Abyssinia	4 11	3 1	10	11
" Angola	4 9	3 0	10½	9
<i>O. baruffii</i> , West Africa . .	4 3	2 7	9½	9

See also the measurements given by Schlegel."

As I have already stated, I have never seen a single specimen from the White Nile*; but having some Angolan specimens now before me, I am able to give a series of measurements showing the difference in size between this and *O. larvatus*.

			Long. tot.	Rostr. Al.	Caud.	Tarsi.	
♂ ad.	Rio Daude, Angola.	Sala.	8	·95	5·1	2·9	·85
ad.	Natal.	Mus. R.B.S.	9	1·1	5·5	3·2	·95
ad.	South Africa.	Mus. R.B.S.	10	1·1	5·5	3·7	·95
juv.	Benguela.	Monteiro.	8·5	·9	5·2	3·1	·9
♂ juv.	Knysna.	Andersson.	9·5	1·1	5·3	3·3	·9
juv.	Natal.	Mus. R.B.S.	9	1	5·2	3·2	·9

I have endeavoured in the above table to compare, as much as possible, individuals of apparently the same age; and the result confirms the conclusion of Dr. Finsch as regards Angolan and South-African birds.

7. ORIOLUS BRACHYRHYNCHUS. (Plate VIII. fig. 1.)

Oriolus brachyrhynchus, Swains. B. W. Afr. ii. p. 35 (1837): Bonap. Consp. Av. i. p. 347 (1850): Hartl. Beitr. Orn. Westafr. p. 24 (1852); J. f. O. 1854, p. 24; Orn. Westafr. p. 81 (1857); J. f. O. 1861, p. 162: W. von Müll. J. f. O. 1855, p. 392: Sharpe, Ibis, 1870, p. 57.

O. pileo nigro: speculo alari albo: rectricibus externis ad basin nigris, quatuor intermediis omnino olivaceis.

Hab. in Africâ occidentali.

* Since the above was written I have seen two examples in the Leyden Museum; and they certainly seemed to agree exactly with the small race from Angola—so far, that is, as I was able to judge without the actual comparison of specimens.

Head glossy black, likewise the throat, extending a little way on to the breast; upper surface of the body deep olive-yellow, brighter yellow on the nape, sides of the neck, and rump; wing-coverts of the same colour as the back, inner cubital coverts edged with olive-yellow, the two or three outer ones edged with grey; primary coverts black, tipped with white, forming a distinct white alar speculum; quills brownish-black, quite white on the inner web, the inner secondaries bright olive-yellow on the outer web, the outer ones grey, with a narrow outer edging of white, primaries edged with white on the outer web; the four middle tail-feathers olive-yellow, the outer ones olive-yellow at the base, bright golden-yellow at the tip preceded by a bar of black; entire under surface rich golden-yellow; bill brownish-red; feet black.

Female or young. The two middle rectrices olive-yellow, the two next with a black bar before the yellow tip.

Sierra Leone (*Swainson*), Fantee (*Mus. R. B. S.*), Gaboon (*Verreaux*).

Oriolus baruffii, Bonap. Consp. Av. i. p. 347 (1850): Hartl. J. f. O. 1854, p. 24: Schl. Mus. P.-B. *Coraces*, p. 109 (1867): Sharpe, Ibis, 1869, p. 383. (Plate VIII. fig. 2.)

Oriolus intermedius, Temm. MS. in Mus. Lugd. (*teste* Hartlaub): Hartl. Beitr. Orn. Westafr. p. 24 (1852, *descr. nulla*); Orn. Westafr. p. 81 (1857) (*descr. orig.*); J. f. O. 1861, p. 163: Cass. Proc. Phil. Acad. 1859, p. 43.

Baruffius intermedius, Bonap. Coll. Delattre p. 74 (*fide* Hartlaub).

Head deep black, likewise the throat, extending a little way on to the breast; upper surface of the body olive-yellow, brighter on the nape, sides of the neck, and rump; wing-coverts of the same colour as the back; inner cubital coverts edged with olive-yellow, the outer ones edged with grey; the primary coverts black tipped with white, forming a distinct alar speculum; quills black, white underneath on the inner web; inner secondaries olive-yellow on the outer web, the outer ones edged with light grey, the primaries edged with white; the two middle tail-

feathers olive, all the others olive at the base, bright yellow at the tip, preceded by a black bar; under surface of the body rich golden yellow; bill brownish-red; feet black.

Gaboon, Moonda River, and Camma river (*Du Chaillu*), Ashantee (*Pel*), Fantee (*Mus. R. B. S.*).

I have kept the synonymy of these two birds separate, but I believe there ought not to be the slightest doubt of their identity. I have a specimen of *O. baruffii*, from Fantee, exactly agreeing with the descriptions of Bonaparte and Dr. Hartlaub; and, again, I have another specimen from the same country exactly agreeing with Swainson's *O. brachyrhynchus*. The only difference exists in the tail-feathers. In the latter bird the four middle tail-feathers are olive-yellow, while in *O. baruffii* the two middle feathers only are olive-yellow, the two next on each side having a black bar before the tip. This character might be sufficient to separate them specifically, but for the fact that this bar seems to disappear gradually. I have seen in Lord Walden's collection a specimen of *O. baruffii* obtained from M. Du Chaillu, where the black bar is uneven and interrupted in the middle by a dash of olive-yellow, and is evidently gradually disappearing. I will not, however, positively unite them, although, as will be seen by my refusing *O. baruffii* a place in my table of species, I do not for a moment believe it to be really distinct from *O. brachyrhynchus*; but I should like to be certain what stage of plumage it represents in that species. Any future ornithologist, when the question is decided, can easily add the list of synonyms of *O. baruffii* given by me above to those of *O. brachyrhynchus*. Both descriptions are from Fantee specimens, from which also the figures of the plate are drawn.

8. *ORIOLOUS NIGRIPENNIS*. (Plate VII. fig. 1.)

Oriolus nigripennis, Verr. J. f. O. 1855, p. 105: Hartl. Orn. Westafr. p. 85 (1857): Cass. Proc. Ac. N. S. Philad. 1859, p. 43: Hartl. J. f. O. 1861, p. 183: Sharpe, Ibis, 1870, p. 56.

O. pileo nigro: speculo alari albo nullo.

Hab. in Africâ occidentali.

Entire head, throat, and upper part of the breast deep glossy-

black ; back golden green, pure yellow on the nape and sides of the neck, and brighter yellow on the rump ; wing-coverts blackish, broadly edged with olive-yellow ; quills black, paler on the underside, the secondaries edged with olive-yellow, primaries edged with white towards the tip ; middle tail-feathers deep glossy-black with a very narrow yellow edging at the tip, the other feathers black at the base, the outer ones for the most part yellow and the inner ones for the most part black, those nearest the middle having most of the latter colour ; under surface of the body very rich golden-yellow ; bill brownish-red ; feet black.

Gaboon (*Verreaux*), Camma River (*Cassin*), Fantec (*Mus. R. B. S.*), Sierra Leone (*Mus. Walden*).

The absence of the white alar speculum seems to be the distinguishing character of the present species. I have examined the type-specimens which are in the British Museum, and subjoin their measurements along with those of two other specimens now lying before me.

		Long. tot.	Alæ.	Caudæ.	Rostr.
1 (Type).	Gaboon.	8	4·4	3	·9
2 (Type).	„	8·5	4·7	3	·95
3.	Fantee.	8	4·4	2·6	·95
4.	Sierra Leone.	7·5	4·4	2·5	·8

Dr. Finsch considers this species to be identical with *O. baruffi*, from which, however, it differs perceptibly in having no white alar speculum, and also in having the tail-feathers blackish, faint olive-yellow only near the base. The presence of this colour may indicate that in time the whole of the rectrices will become olive-yellow. If this is proved to be the case ultimately, Dr. Finsch's supposition may be right ; and in that case *O. nigripennis* will be the young, *O. baruffi* the intermediate stage, and *O. brachyrhynchus* the old of one and the same species. I confess that I should not be surprised at this ; and another fact may be mentioned in favour of their identity, namely that they all three inhabit the same localities, specimens of each having been obtained at all the collecting-points from Sierra Leone southwards to Gaboon.

XVII. *On the Ornithology of Hainan**.

By ROBERT SWINHOE, F.Z.S. &c.

(Plate IX.)

[Continued from p. 97.]

32. CUCULUS —?

I saw no true Cuckoo in Hainan, except on two occasions. On the 10th of March in Lingshuy lagoon (S.E. Hainan), out of a hedge enclosing some fields, I startled a rather large specimen in the hepatic plumage. I followed it from tree to tree unsuccessfully. It uttered no note, and was probably only a straggling migrant. Again on the 21st of March, in Paklai Bay (W. Hainan), I saw a similar straggler. In such a difficult group as this it would be preposterous to offer a guess as to the species seen.

33. POLYPHASIA TENUIROSTRIS (Gray).

In the first fortnight of February, I saw this little Cuckoo several times in the neighbourhood of Kiungehow city, and shot two males. On the 1st of March I procured a male in the barred-rufous or hepatic plumage. The bird had not yet commenced laying, and was silent. The two typically-coloured males measured the same—wing 4.6, tail 5. The rufous bird—wing 4.375, tail 4.875. This is the same species that comes in summer to Amoy and its neighbourhood to breed. There I have often obtained full-plumaged rufous birds of both sexes, and less frequently normal-plumaged specimens patched with barred-rufous. The latter I have also seen from Calcutta. Birds in this peculiar plumage, brighter and more intensified in the male, creep about the bushes in silence and appear to keep aloof from others. I have not known them sing or court the other sex, and I do not think they breed. They wear their rufous dress throughout the summer; and it strikes me that their inability to assume the mature coat is due to weakness or some sexual defect.

* In the first part of this paper (p. 93), *Palaemonis javanica* (Osbeck) should give place to *P. lathamii*, Finsch (Papageien, ii. p. 66).

34. *EUDYNAMIS MALAYANA*, Cab. & Heine.

On Naochow island (2nd February) I saw a couple of Koels only, and did not shoot either. They seemed unsettled visitors. In all the cultivated parts of Hainan where bamboos grew and trees abounded, alike in town and country, in fact where Crows and Mynahs found a home among men, the Koel was abundant. In the jungles of the south they did not show themselves; but on the undulating land of the west they were as common as in the north and east. They always appeared restless throughout February and March, chattering and flying in an agitated manner from tree to tree, uttering their dreadfully noisy notes from morning to night, and sometimes for the greater part of the night, especially when there was moonlight. My previous acquaintance with the Koel I have already described in 'The Ibis' (1861, p. 46). It was in the city of Canton, in the beginning of May 1860, when this bird had arrived and was in full note and engaged in courting. Higher up the China coast I have only observed it as a rare and occasional straggler. On first meeting the bird at Hainan, I was naturally under the impression that it was on its passage to its breeding-quarters in the south of China; but I soon found that at this early time of year (February) each bird was in the height of amatory excitement. I then began to think that it was possible that the Koel, not being confined to any locality by the cares of nidification, was paying his gallant attentions to the fair of his species that he found on the northward journey, who followed as soon as they got some kind Crow or Mynah to adopt the "little stranger," to continue the same game with fresh sweethearts in their summer home. But fortunately, bad as are the morals of the Cuckoo-group in their promiscuous love, I found my surmises as to this wholesale abandonment of their children was incorrect. For, judging by a comparison of their skins, the Hainan Koel is of a different race from the Koel that visits Canton; and on reflection I cannot help thinking that its loud call-note is not quite the same.

The Canton Koel looks very much like the race that frequents Southern India and Ceylon, while the Hainan Koel, by its larger bill and larger wings, agrees with the *E. malayana*, Cab. & Heine,

of the Himalayas, Java, &c. (*cf.* Ibis, 1869, p. 340). I will here give a list of measurements of my birds, together with those of three Himalayan specimens received from Dr. Squire:—

Males.

		Wing.	Tail.
Hainan	{ adult	8·6	8·125.
	{ " "	8·25	8·625.
	{ " "	8·75	
	{ " "	8·5	
Himalaya	{ immature	8·1	7·875.
	{ adult	7·875	7·875.
	{ " "	8	7·875.
	{ " "	8·1	7·875.
Canton	" "	7·5	7·5.
Swatow	spotted	7·6	7·875.

Females.

Hainan	{ adult	8·25	7·875.
	{ " "	8·418	
	{ " "	8·375	
Canton	{ melanoid	8·125	7·5.
	{ adult	7·5	7·5.

Lord Walden showed me a male Koel from Java, which agrees with the Hainan bird; but a male specimen from Manilla, kindly lent me by Mr. Gould, has a shorter and deeper bill. The males of the Hainan and Canton Koels are similar in colour; but my single Canton female is much brighter than the Hainan ones. The plumage of female Koels, however, follows no constant rule: one of my four from Hainan has the throat and breast closely banded with black, the bars fusing into one another; the under parts much more narrowly waved with black than ordinarily; the streaks on the head reduced almost to lines; and the spots on the upper parts small and indistinct, with scarcely any green gloss on the brown ground-colour. Had this specimen been the only one procured, I should have felt no hesitation in considering the Hainan Koel a species quite distinct from the Canton bird. But as it is, we learn that the Hainan bird is a distinct larger-billed race, and is not the Koel that summers in Canton. The winter-quarters of the latter will probably lie more directly westward of Canton. I think we

may safely infer that the large-billed race resides permanently in Hainan, as I procured a fledged young one early in February, which was being tendered by its fosterparents (*Acridotheres philippensis*), which were feeding it; but from the higher branches of the same tree, I put out and shot a female Koel: whether she was in any way connected with the young bird it is impossible to say. The egg that produced so old a chick must have been laid in the beginning of January. The fledgling was not in the normally immature or female plumage, but in the white-spotted black dress which I had hitherto taken to be the halfway to maturity of the male, having before received a similarly coloured full-grown specimen from Swatow. An examination of males with immature feathers about them shows that as a rule they, in the young state, resemble the female, and moult at once into the black plumage. What, then, means this melanoid plumage that some young males begin life with?

The full-grown melanoid bird from Swatow has the upper parts and breast deep bronzed-black, with many white spots on the forehead, and a few on the back of the neck and on the back, and broad white tips to the scapulars, coverts, and quills; tail with numerous rufescent bars towards the tip of the rectrices; rump and tail-coverts browner, with many rufescent bars; belly and under wing less bronzed, with abundant bars of white.

The Hainan fledgling is blacker still than the Swatow bird, with only a few light yellowish-brown spots on the scapulars and wings, and a very few spots and bars on the under parts. The bills of both are blackish, that of the Swatow bird light on the under mandible.

That both the large-billed race of Hainan and the smaller-billed bird of South China should have this occasional melanoid plumage in the young male shows a close consanguinity between the two, and confirms me in my belief that they cannot be regarded as more than races of the same species. From Lord Walden's paper above cited, we learn that the oldest name for the South-China Koel is *E. maculatus* (Gmel.) = *E. chinensis*, Cab. & Heine.

In the 'Kiung-shan-Heen Che,' the Koel is called the *Koo-gō*,

or "wicked mother-in-law." "Big as a Magpie," it says; "colour pure black, eye crimson as blood. It is named after the sound of its voice, which is extremely mournful. Loo-hwang has the following couplet:—

"The sage that hears the Koo-go's voice,
Must expect his wife's spirits to fail."

"Imitate its notes, and it will sing with increased energy. It lays in the Magpie's nest, and leaves the Magpie to hatch and rear the young."

35. ZANCLOSTOMUS TRISTIS (Lesson).

On the afternoon of the 18th of February, at Shuy-wei-sze (Central Hainan), while walking up a lane to a village, I noticed some Magpies teasing a long-tailed bird in an overhanging banyan-tree. It uttered no cry, but flew quietly to a hedge, where I shot it. It was a female of this species, with dark eyes and pink-red skin round them. It agrees with a fine male skin I have from India, but is smaller in size, as one might expect in a female, and has a somewhat smaller bill.

Hainan ♀. Wing 5·875; tail 12·75.

India ♂. „ 6·4; „ 16·75.

On the jungly hills of Lingshuy (S.E. Hainan) and Nychow (S. Hainan), I saw them on several occasions skipping up from the tangled brush on to the more open branches of the higher trees, and whisking about their long tails like the *Urocissæ*. I shot one or two; but it was mere waste of life, as I did not succeed in recovering the birds. In the more open country near Nychow city, while riding with the General's Aide-de-camp to visit a hot spring, we put up a beauty, with a tail fully as long as in the Indian male. It flew silently along the hedge, and then, slipping into it, threaded its way to the other side and thence escaped.

36. CENTROPUS RUFIPENNIS (Illiger).

Called in Hainan the *Ho-kee* or "Fire-fowl," a name usually applied in China to the domestic Turkey. Among the bamboo-copses and gardens around Kiungchow-foo, and all other towns in Hainan, the Crow-Pheasant was abundant, and one could

never go for a walk without both hearing and seeing it. I have three adults, and one in immature plumage, from the neighbourhood of the capital city, and an adult male from the south. They measure:—

S. Hainan.. adult ♂. Wing 7·75; tail 10·25.

N. Hainan	{	♂.	8	;	11·5.
		♀.	8·75;	11·5.	
		♀.	8·75;	12·25.	
		immature.	8	;	10

The adult specimens are dull-coloured, and lack, on the breast especially, the fine deep bluish-purple of the continental bird; but this colour is not constant in my series from different parts, and appears to fade, and often to change to bronze. My immature bird is in the second stage of plumage, which I have not seen before in this species.

Head and hind neck deep dusky olive-brown, the stems of most of the feathers being pale yellowish-brown. Wings and upper back chestnut, washed on the tertials and tips of the quills with brown; two or three of the secondaries banded with blackish-brown. Lower back, tail-coverts, and two middle rectrices deep greenish-brown, barred with dull yellowish-brown, the others deep brownish-green, with only a few indistinct bars near their bases. Throat and breast light yellowish-brown mottled with brown, the feathers having whitish stems. Belly and flanks dusky blackish, barred closely and obscurely with light dingy yellowish-brown.

This second plumage the bird does not, according to Dr. Jerdon (B. Ind. i. p. 349), always acquire on its progress to maturity, sometimes jumping from the first to the adult form. *C. rufipennis* has not fallen much under my observation. But *C. viridis*, which has been the prevailing species at places where I have been mostly stationed, I think I can state with certainty, as a rule, undergoes the three changes.

37. CENTROPUS VIRIDIS (Scop.).

In the outskirts of the jungle at Lingshuy (S.E. Hainan) I saw several of this small Crow-Pheasant, and on West Island (S. Hainan) I obtained a specimen. It was in the second phase of plumage.

38. *ÆTHOPYGA CHRISTINÆ*, Swinh., Ann. & Mag. N. H. 4th ser. iv. p. 436 : Walden, *suprà*, p. 36, Pl. I. fig. 1.

On the 18th of February, at Shuy-wei-sze (Central Hainan), I fired at a dark-looking Sun-bird, moving rapidly about the twigs of a tree, and picked up this lovely species. The same place rewarded me on my return visit with a second specimen. I only saw it once again; and that was on the 23rd of February, near Lingmun, my furthest point among the mountains of the interior. We were away over the hills on a visit to a Le tribe, who were cultivating a few small patches of ground by a stream on a hill-slope. Their dirty huts were few in number, gathered together on a terrace about a majestic wild fig-tree. In rear and by the side of the huts were a few bushes and smaller trees. On an exposed branch of one of the latter, a little *Æthopyga* stood forth, and, contrary to the usual saying that birds of beauty have no voice, delivered a charming little short song, which it repeated at intervals. I sought in vain for the female. I did not meet with the species again in Hainan.

I repeat with some alterations my description of the male :—Crown of the head and back of the neck deep purplish black, with dark green and coppery reflections. Sides of the face and neck and the back the same, without reflections. Throat and breast rich maroon-red, the former flanked along the *maxillæ* with a line of dark roundish feathers shot with steel-blue, green, and purple. Scapulars rich brownish-olive, the same colour tinging the black of the back, and becoming greener as it broadly edges the wing-coverts and secondary quills. Feathers of the wing hair-brown, the primaries only slightly edged with olive. Rump canary-yellow. Upper tail-coverts, two central tail-feathers, and outer edge (more or less) of all but the outer feather glossy metallic dark green; underpart of central rectrices, and the main portions of all the others black, the three outer ones being tipped with white, increasing in extent to the outer feather. Below the maroon, the breast is crossed by a band of olive-green, fading into the dingy yellowish-white of the underparts. Axillaries white, with a primrose wash; inner edges to quills creamy-white. Tail of twelve graduated feathers, the two middle ones with elongated tips. Bill blackish brown, paler on the

lower mandible. Iris dark brown. Legs liver-brown. Tongue with a brush at its tip.

Length about 4.25; wing 2; tail 2, including the protracted tips, which measure .4; bill from forehead .625, well curved and somewhat thick.

Dr. Jerdon, in speaking of the family (B. Ind. i. p. 350), says that the tongue has no brush at the tip. I have entered it as above in my note-book, from a fresh example.

39. ARACHNECHTHRA RHIZOPHORÆ, Swinh., Ann. & Mag. N. H. 4th ser. iv. p. 436; Walden, *suprà*, p. 25.

Lord Walden, who was so kind as to compare my specimens of this bird and the last with his fine series of *Nectariniæ*, wrote to me that this "closely resembles *A. flammaxillaris* from Tenasserim, but differs by possessing a metallic frontal patch"; and I described it in similar words in the 'Annals.' I have since compared mine with a specimen in Mr. Gould's collection; and though I can discover no other material difference, I will here give a further account of it, that the species may be recognizable to those who have not the good fortune to possess the *A. flammaxillaris*.

Male.—Forehead to top of crown, before and below the eyes, throat, and breast black, with steel reflections of purple, blue, and green; the feathers of a rounded form. Below the pectoral patch follows a band of fine maroon, and below again a broader one of olive-black. Belly sulphur-yellow, washed on the flanks with olive, and yielding to primrose-yellow on the vent. On the sides of the breast, in front of the carpal joint of the wing, occurs a tuft of fine yellow feathers with a touch of flame-colour. Axillaries white tinged with yellow, under edges to quills nearly white. Upper parts and wings dull light brown, tinged on the former with olive-green, and faintly edged on the quills with the same; the quills light hair-brown, the coverts and tertiaries being edged with pale brown. Rump washed with brighter olive-green. Tail of twelve broad feathers, slightly graduated, brownish-black, the three outer ones with a white tip, increasing in extent to the outer feather, where it occupies also half the outer margin. Bill black. Irides blackish-brown. Legs and claws deep leaden-grey.

Length about 4; wing 2; tail 1.417; bill .625, bending downwards from its middle.

Female.—Wanting the dark markings of the male. Forehead the same colour as the back; throat and breast ochreous-yellow, blending with the sulphur of the belly; vent and sides dingy yellowish; carpal joint of a more decided primrose-yellow. The wing is of the same length, but the tail slightly shorter.

A young male is similar to the female, but has a streak of metallic-tinted black down the middle of the throat.

About the capital city in the north-west I did not meet this lively little bird; nor in my journey into the interior did I see it, until I got to Shuy-wei-size, where it was quite a common species among the trees round villages. Its call-note somewhat recalled to mind the "toweit" of *Reguloides superciliosus*, but is louder and sharper. As it hovers and frolics over a bush, it utters a rapid succession of these notes; but its voice often runs off into quite a cheerful little song. In the midst of its activity, it often stops suddenly and begins to preen itself, twittering gaily all the while. On the banks of the Chinlan river (N.E. Hainan), on the 7th of March, we found it in abundance among the mangrove-marshes, flitting from bush to bush and alighting on the topmost twigs. One of my comrades shot one with a charge of No. 1 shot. The specimen was little injured, one pellet only having pierced through the neck. It was difficult to decide what shot to use to do the least damage to the plumage. I usually fired with a minimum charge of small shot; but this would often knock the bird to pieces, and larger shot scattered so much that it resulted in not hitting at all. The edge of the jungle at Lingshuy and Yu-lin-kan (S. Hainan) yielded plenty of these birds, and we found them also plentiful on West Island, picking the insects off the large red flowers of the tall leafless *Bombax malabaricum*. At Tuntow on the borders of the Kangên and Changhwa districts, at Haosuy, and at Hungpe (all in W. Hainan) we noticed them again in tolerable numbers, and from all the places noted we got specimens. I have thus a good series: and not one shows an extension of the frontal metallic black; and as the last

specimen was shot on the 30th of March, there is no reason to suppose that the summer dress would appear otherwise, all the birds having the lateral yellow breast-tufts well developed.

In a former 'Ibis' (1865, p. 30), Mr. Blyth stated that the Derby Museum contained a specimen of his *A. flammoxillaris*, labelled "from China, very rare." I thought that possibly that specimen might be from the west coast of China, and might turn out to be our species. I therefore wrote to Mr. T. J. Moore, Curator of that Museum, to make inquiries. Mr. Moore very obligingly sent me the following reply:—"Our specimen of *Nectarinia flammoxillaris*, Blyth (still bearing Blyth's own determination in pencil on two labels attached), is certainly labelled 'from China, very rare'; but it was obtained by Lord Derby from 'Mr. T. M. Williams, June 1847,' and *not* from Mr. Fortune. Williams, I believe, was a London dealer, from whom Lord Derby made frequent purchases; but I am not aware that any birds from Fortune (of which we have many) were obtained otherwise than directly. . . . The bird shows no trace of a dark metallic forehead, but is there of the same tint as the rest of the upper plumage; the dark blue metallic tint of the throat and chin comes fully up to the eye, and thence to the beak, but not further."

This shows satisfactorily that the bird in the Derby Museum is not our *A. rhizophoræ*, but the true *A. flammoxillaris*, Blyth; whether from China or not is uncertain, and I do not think it safe to admit *A. flammoxillaris* into the China list until we have better proof of its existence within Chinese limits.

40. *DICÆUM CRUENTATUM* (Linn.).

Before I left Amoy, I ascertained that this pretty little Flower-pecker occurred not uncommonly in the hill-ranges, seventy miles or so from that port. In Hainan it was everywhere a common species among bamboos or trees. The males, with their gaudy scarlet backs, are fond of showing themselves on the conspicuous points of trees, fluttering, and uttering repeatedly their loud "tic-tic" notes. The females are attracted, and reply with a "tweet," but seldom leave the cover of the leaves. The bird has the straight fluttering flight of a Spar-

row. Lord Walden writes with reference to a male and female from Hainan I sent him to compare :—" Your *Dicaeum cruentatum* belongs to the Malacca race, I think, although it does exhibit traces of green iridescence on the wings. The wing is longer by $\cdot 1875$ in. than what I find in six specimens, one being from Malacca, one from Tippera, and four from Moulmein. The female closely resembles the females from Moulmein."

41. *DICAËUM MINULLUM*, sp. n.

This plain-coloured Flower-pecker I met with at Yu-lin-kan (S. Hainan). It was searching the tops of the bushes for insects, in company with several of the last species. I took it for a female of *D. cruentatum* until I got it into my hand, and found it lacked the crimson rump. The specimen procured is a male, and is even smaller than *D. minimum*, Tickell (Jerdon, B. Ind. i. p. 375).

Male.—Length about $2\cdot75$; wing $1\cdot67$; tail $\cdot867$, even; tarsus $\cdot416$; bill, from forehead, $\cdot375$.

Upper parts olive-green, brownish on head, back, and scapulars, yellowish on the rump. Coronal feathers with deep brown centres, giving a spotted appearance to the top of the head. Wing-feathers hair-brown, edged with olive-green, broadly on the coverts and tertials, and less so on the quills. Tail hair-brown, tipped with brownish-white. Throat and belly dusky yellowish, clearer and nearly primrose on the vent. Flanks greyish-olive. Axillaries and carpal edge white, with just a tinge of primrose. Bill deep brown, light bluish-grey on lower mandible at base. Irides dark brown. Legs and claws leaden colour.

42. *HIRUNDO GUTTURALIS*, Scop.*

From the day of our arrival at Hainan, onwards, the Swallow that summers in Canton and up the China coast was frequently seen. Some of them would seem to pass the winter in the island. We saw them at all points of the coast visited. Strangely enough, we met with no other species.

43. *LANIUS SCHACH*, Linn.

The common Butcher-bird, as usual in South China. Hainan

skins agree with some from Amoy. ♂. Wing 4·2; tail 5·25. ♀. Wing 3·9; tail 5.

44. *LANIUS FUSCATUS*, Less.; Walden, Ibis, 1868, p. 69; *L. melanthes*, Swinhoe, Ibis, 1867, p. 405.

I met this smoke-coloured Shrike on two occasions in central Hainan. Like the former, it was solitary, and perched on tops of trees and bushes and other conspicuous places. The first specimen procured is like the one I obtained near Amoy (Ibis, 1867, *l. c.*), but wants the chocolate vent—it being there of the same tint as the belly, and thus the last trace of its connexion in colour with *L. schach* is lost.

The second Hainan specimen is dusky rufescent on the scapulars, lower back, and flanks, and almost chocolate-colour on the upper tail-coverts, tibial flanks, and vent. In this, then, there is apparently a slight reversion to *L. schach*. I was at first led to think that this was a cross between the two; but I am now rather inclined to believe that *L. fuscatus* is a recent and unfixed derivation of *L. schach*, and still bears a tendency to revert. The fact of the bird having been found at Amoy, Hongkong, and Hainan shows that though its origin may be comparatively recent, it has endured long enough to spread itself over some hundreds of miles of country; for even if we take it as a melanoid form, we can scarcely fancy this particular melanism being produced at different places such distances apart. ♂. Wing 4; tail 5·25. ♀. Wing 4; tail 4·875.

45. ? *LANIUS LUCIONENSIS*, Scop.

The first red-tailed Shrike I saw was on the 20th of March, at Tuntow (W. Hainan), where there were several about the bushes, uttering the long chattering note of *L. lucionensis*. I met a few again on the 2nd of April at Hoihow (port of the capital). They seemed to be fresh arrivals. As I unfortunately did not procure a specimen, I assign it to this species with doubt. The birds I saw seemed browner than the grey-headed form which visits Amoy in such numbers in spring and autumn.

46. *TEPHRODORNIS PELVICA* (Hodgs.).

I was much pleased to see, for the first time, this tropical form of Shrike. It occurred in central Hainan, keeping to the

lower branches of trees, from which it frequently dropped to the ground. I procured two males and a female. The male Hainan bird has the grey of the head and hind neck clearer, and the brown of the back, wing, and tail lighter than is usual in Indian specimens; but the two birds otherwise agree. The female has the head the same colour as the back. Her eye-streak is brown and indistinct, except on the ear-coverts. Her bill is lighter-coloured, and pale at the base of the lower mandible. ♂ & ♀. Wing 4·5; tail 3·125.

47. *GRAUCALUS REX-PINETI*, Swinhoe, Ibis, 1863, p. 41.

At Tai-ping-sze (Central Hainan) I came across a party of large Caterpillar-catchers in an open glade in the forest. They flew with the sweeping flight of a Fly-catcher from tree to tree, perching on the thick branches. Some I noticed had very black faces and under necks, like the Formosan bird. Unfortunately, however, I only succeeded in shooting a couple of immature birds. These I can match from my Formosan series; but they have rather larger bills, with the tomia of the upper mandible near the base more bulging, and bending over the tomia of the lower. This character also occurs in some of the Formosan birds, but not to such an extent. My Hainan examples measure:—wing 6·625; tail 5·5, of twelve feathers, narrowed towards their ends and graduated. There is a mounted specimen in the gallery of the British Museum, which has quite as black a face and breast as the finest of my Formosans. It is simply marked “India.” It seems to be identical with the Formosan form; and from this occurring in Hainan I should infer that it possibly extends to the Tenasserim. In Lord Walden’s collection there are also some black-faced Indians. The true *G. macaei* (Less.), from India, would appear to have only a trace of black on the cheeks in its adult state. I have an adult from Hindostan, sent me by Mr. Blyth, which has no marks of immaturity on its under parts, and yet has but a faint tinge of black before and in rear of the eyes. In *G. rex-pineti*, both sexes acquire the black, but the female has it to a less extent.

48. *VOLVOCIVORA SATURATA*, sp. n.

This is a smaller, shorter-winged, and darker species than

the Indian bird, which visits South China in summer, *V. lugubris* (Sundev.), *V. melaschistos* of my former lists (*cf.* Hartl. J. f. O. 1865, p. 161). I have one male and three females from Hainan.

Adult male.—Upper and under parts deep cinereous-grey, mixed with a little brown on the latter; the under tail-coverts yellowish-grey, the longer feathers thereof being tipped with white. Wing deep bronzed-black, the lesser and greater coverts margined with grey, the winglet and quills with light yellowish-grey. Tail bronzed-black, with two outer rectrices broadly tipped with white, the others less so. Bill and legs black. Iris deep brown. Length about 8; wing 4.4; tail 4.2; bill from forehead .65; tarsus .78.

Adult female.—General colour lighter, and not so cinereous as in the male. Back and scapulars strongly tinged with brown, as also are the breast and flanks. Wings and tail browner, but having the green gloss. Wing-coverts and tertials edged with grey, primaries edged with white for the greater part of their length. Outer feather of the tail .9 shorter than the middle; outer quill of the wing 1.65 shorter than the longest.

The younger females have the axillaries and ventral feathers edged with white, and the vent and subcaudals waved obscurely with black.

The adult female has a conspicuous white wing-patch on the inner webs of the central primaries; another female, younger, or with some abdominal cross-marks, has only a few white freckles on the edges of the inner webs; a third, younger still, has no white at all. The adult male shows a defined edge of white specks (*cf.* P. Z. S. 1863, p. 282).

<i>V. saturata</i> , Hainan	♀.	wing 4.5	tail 4.2
" " "	♀.	4.5	" 4.4
<i>V. lugubris</i> , Canton	♂.	4.8	" 4.3
" Amoy	♀.	4.7	" 4.5

That this Caterpillar-catcher is a resident in Hainan I should infer from its being found there in February. I frequently came across it in various parts of the country. It was stealthy in its habits, seeking the cover of umbrageous trees and bushes, and in its flight and actions much resembled the *Polyphasiæ*.

It does not often seek high trees, and is not fearful of approach. This is a curious instance of a distinct race being found resident in Hainan, while the ordinary bird of India passes by to summer in the south of China.

49. *PERICROCOTUS CINEREUS*, Lafresnaye.

On our return voyage I found this species, together with other migrants, in an orchard at Naochow, on the 5th April. I procured a male.

50. *PERICROCOTUS CANTONENSIS*, Swinh., Ibis, 1861, p. 42.

Several of this were seen with the last at Naochow, and two females shot. I presume they were on their passage northwards. Neither species turned up at Hainan, but one might expect them to touch on the western coast of that island, as some of the Fly-catchers have been found to do.

51. *PERICROCOTUS FRATERCULUS*, sp. n.

This brightly coloured Minivet is a resident in Hainan, and found in all the woody parts of the island. It is a diminutive of *P. speciosus* (Lath.), but is much smaller, with smaller and less-hooked bill. The males of the two races do not appear to differ in colour; but the female of the lesser bird is much brighter-coloured, with the front band bright yellow. The typical *P. speciosus* I have got several times from the inner mountains of the Fokien Province; and as my dozen specimens from Hainan agree with one another in size and colour, I think it as well to separate the smaller race from the well-known Indian species. Mr. Gould has the Hainan species from Siam and the Khasia hills. It measures about 8 inches; wing 3·8; tail 3·8.

Du Halde, in his 'Description de la Chine,' published in 1735 (i. p. 230), gives a short account of Hainan, mentioning, among other ornithological productions of the island, "some little birds of the size of a 'fauvette,' which are of the finest red that can be seen, and others whose plumage is of a golden-yellow, which has much brilliancy. These two species of bird, although different, are always found together."

52. *DICRURUS MACROCERCUS* (Vieillot).

In all the cultivated parts of Hainan, and in the clearings at

the edge of the jungle, even in the south of the island, the black Drongo was abundant. It is one of the accompaniments of cultivation, like the Sparrow, the Yellow Wagtails, and so forth among birds, and the castor oil, the plaintain-weed, and others among plants. I have brought away a pair:—

♂	wing	5·875	tail	6·125
♀	„	5·75	„	5·625.

In the former the outer rectrices continue up towards the tip ; in the latter they are flat.

53. BUCHANGA LEUCOGENYS, Walden, Ann. & Mag. N. H. 4th ser. v. p. 219 : *Dicrurus leucophæus*, Swinhoe, P. Z. S. 1863, p. 285, *et alibi* (*nec* Vieillot).

The White-checked Grey Drongo was not rare among the fine woods of Central Hainan. It was generally met in parties of three or four. It has a loud defiant song, which it utters while perched on the top of high boughs of trees or tall bamboos. This is the same species that passes up the China coast to summer. I formerly applied the name *leucophæus* to mark this bird ; but Lord Walden has lately proved that *D. leucophæus*, Vieill., is the same as *D. cineraceus* (Horsf.) of Java, over which designation it takes precedence.

My single male specimen from Hainan measures:—wing 5·625 ; tail 5·125 ; tip of middle to tip of outer rectrix ·25.

54. BUCHANGA MOUHOTI, Walden, Ann. & Mag. N. H. 4th ser. v. p. 220.

This is a race of Ashy Drongos closely allied to *D. cineraceus* (Horsf.) of Java, with which it requires close comparison before discrimination is possible. Lord Walden has founded the species under the above name on a specimen from Cambodia, procured by Mouhot, compared with which my Hainan specimens are somewhat larger, and a specimen I have from Tenasserim, sent by Mr. Blyth, smaller. I have two males and one female from Hainan, measuring :—

♂ . .	wing	5·9	tail	6·25	tip of middle to tip of outer rectrix	2
♂ . .	„	3·9	„	6·373	„	1·875
♀ . .	„	5·62	„	6	„	1·875

while the Tenasserim bird, sex unknown, measures—wing 5·3, tail 5·625, with outer rectrix exceeding the middle by 1·7. This, by the appearance of its tail, I should take to be a male. Mr. Blyth has labelled it *D. longicaudatus*.

The Ashy Drongo, with which I have never met in other parts of China, occurred in north-western Hainan, near the capital city, and more frequently in central Hainan, about Taping-size and Shuy-wei-size. It is a bird of solitary habits, sitting on high exposed places, and of a quarrelsome disposition. I watched one that made repeated flights from an adjoining wood to attack a *B. leucogenys* that, with his mate, had taken possession of a line of trees. The White-cheek was serenading his mate, when the Grey bird attacked him, and drove him off his perch. When the latter was gone, the former resumed his position and his occupation. The attack was renewed again and again, until the wife came to the front, and the united forces vanquished the foe and made him retreat to his proper limits. The notes of the Ashy Drongo are quite distinct from those of the White-cheeked and of the Black species.

55. BUCHANGA INNEXA, sp. n.

Intermediate in size and colour between the two last is the Grey Drongo of north-east Hainan. The banks of the Chinlan river in the Wenchang District are lined with mangroves and dark forests of cocoa-nut trees. Among the latter this species was the chief bird, occurring in small parties, and in habits resembling *B. leucogenys*. I shot a pair, and saw by the pale face-mark and the yellowish crimson iris, that they were of a distinct form: the iris of *B. leucogenys* is crimson, that of *B. mouhoti* blackish crimson. This is just such a bird as one would expect from a cross between the two species above mentioned. The feathers edging the eyelids in front of the eye and the base of the ear-coverts are dusky whitish; the downy feathers of the abdomen pure white, the vent greyish-white. On the crown of the head the feathers are small and rounded, as in *B. mouhoti*, whereas the wings and tail are coloured as in *B. leucogenys*, but darker, and the tail is more deeply cleft. The remaining upper and under parts are quite intermediate in tint.

♂ .. wing	5·75	tail	5·75	tip of middle to tip of outer rectrix	1·625.
♀ .. „	5·375	„	5·625	„ „	1·4.

56. *ARTAMUS FUSCUS* (Vieillot).

In a partly cleared enclosure, by the side of jungle, at Yulin-kan bay (S. Hainan), I noticed a pair of these birds sitting dove-like together in the fork of a tree. I fired at them; one fell; the other flew off, but turning in a half-circle perched on a neighbouring tree, whence it dropped dead. Their irides were light reddish-brown. I never met with the species again in Hainan. I have compared mine with examples from India, and do not observe any difference between them.

57. *MYIAGRA AZUREA* (Bodd.).

Often met with in bamboo clumps about villages.

58. *BUTALIS CINEREOALBA* (Temm. & Schleg.).

Occurred in the gardens about Kiungchow-foo in February. Is a winter visitor at Amoy.

59. *BUTALIS FERRUGINEA* (Hodgs.).

I procured it on the 29th of March at Haosuy, and on the 30th at Hungpe, both places on the western coast of Hainan. It passes up the China coast in summer.

60. *CYANOPTILA CYANOMELÆNA* (Temm. & Schleg.).

Males of this species appeared in numbers at Haosuy on the 29th of March; and in Naochow island on the 5th of April I saw them again. I presume they were on their journey northwards. I obtained three males at the former place.

61. *ERYTHROSTERNA LEUCURA* (Gmelin).

On the 19th of February, on the road near Tai-ping-sze (Central Hainan), I shot one of this species in the winter plumage. It visits Amoy during the cold season.

62. *ERYTHROSTERNA MUGIMAKI* (Temm. & Schleg.).

On the 5th of April, on Naochow island, I shot a specimen of this little Fly-catcher in its winter dress, with green back and light red throat and breast.

63. *XANTHOPYGIA NARCISSINA* (Temm. & Schleg.).

This also occurred at the same date and place as the last. I

saw several, and procured a male, in a transitional stage of plumage, and a female.

64. PETROCINCLA MANILLA (Bodd.).

On the houses of the capital city in February, and on the rocks about Lingshuy (S.E. Hainan) on the 11th of March, and at Haosuy (W. Hainan) on the 29th March, I repeatedly noticed this Rock-Thrush. I have a male from Lingshuy and a male and female from Haosuy. The males have the rusty chestnut of the under parts well developed, save on the tibiae and flanks, which are deep greyish-blue like the back and breast.

65. ? GEOCICHLA CITRINA (Lath.).

Returning from Shuy-wei-sze (Central Hainan) I put up an orange-backed Thrush in a wood. I was unsuccessful in my attempt to get the bird.

66. TURDUS CARDIS, Temm. & Schleg.

Early in February I saw this Thrush about the gardens at Kiungchow-foo, and on the 20th at Tai-ping-sze (Central Hainan) I bagged a fine male in full adult black and white plumage.

67. TURDUS MANDARINUS, Gould.

The Chinese Blackbird was seen, but rarely, at Kiungchow city, and about the villages of north-west Hainan. I met it also occasionally in central Hainan. It was extremely shy and difficult to approach, and I regret to say I did not procure a specimen.

68. TURDUS CHRYSOLAUS, Temm. & Schleg.

On the 6th of March, up the Chinlan river (N.E. Hainan), we found a small party of these Thrushes in a wood.

69. GARRULAX MONACHUS, sp. n.

Forehead, round the eye, ear-coverts, throat, and upper breast deep black; crown and nape deep bluish-grey, with a line of small pointed white feathers between the grey of the crown and the frontal black. Remaining body-plumage olive-brown, brightly rufescent on the hind neck, sides of neck, lower neck and under parts. Inner tips of wing-feathers deep hair-brown, the primaries being edged outwardly with greyish-olive,

yielding to greyish-white towards their tips. Tail olive-brown, faintly barred with blackish-brown, with the stem of each feather the same colour, which also broadly tips and margins each, increasing on the lateral feathers towards the outer one, which is entirely blackish-brown. Bill blackish-brown; legs and toes brown, with lighter claws.

Length about 10 in.; wing 4.125 (5th and 6th quills the longest, 1st to 4th much graduated); tail 4.5, of 10 broad graduated feathers, the outer one being .75 shorter than the centrals.

On the 10th of February, on my journey inland, as I was being carried in my chair over a grassy hill sprinkled with bushes, a Babbling-Thrush flew across the path. It was of a colour so distinct from any thing I knew, that I at once jumped out and gave chase. I found several of them muttering to themselves in the thorny bushes, occasionally showing out of the leaves, and taking a furtive glance at me. The notes they uttered were in a broken murmur, like the dreamy cry you hear from barn-door poultry when a hawk flies over. I shot two; one was only hit in the foot, but it was so frightened that it allowed me to put my cap over it. The irides of the first bird were dingy-black tinged with pink. The other bird had the iris of one eye white, with a pink-chestnut ring round it; its other eye was as in the first bird. Further inland the species was common; and it occurred both in the jungles of the South, and in the screw-pine (*Pandanus*) hedges of the West. Its call-note is loud, and the babblings varied and not unmusical. In some the irides are red-chestnut. The captain of the port of the capital city, who showed great taste in the painting and decorating of his official residence, had several species hanging up in well-made and painted cages in the covered entrance to his reception-hall. Among other feathered favourites, he had one of this species, and, to match it, on the opposite side he had a *G. chinensis* (Scop.). I asked him where this last came from; and he informed me, from the Prefecture of Kaochow, whence it is carried by the West River to Canton, and that he had got his from a junk. It is a common bird in the Hongkong and Canton bird-shops, together with *G. perspicillatus*, *G. sannio*,

and *Leucodipterum sinense*. At the fishing-town of Hoitow (W. Hainan) *G. monachus* was exposed alive in cages, for sale, as well as some other Hainan novelties. I bought a pair of them, but they did not live long.

70. LEUCODIPTERUM SINENSE (Linn.).

I was much surprised to find our well-beloved "*Hwamei*," also a native of Hainan. It occurred to me on the bush-patched hills of the interior, at the place where I first met the last. My specimens agree with those I have from Foochow and Amoy. The irides of the Hainan birds were yellow.

71. POMATORHINUS NIGROSTELLATUS, sp. n.

Allied to *P. stridulus* of Southern China, but larger, with stouter bill and legs, at once distinguishable from it by the black instead of chestnut spots on the breast.

Upper parts rufescent, olive-brown. A white eyebrow extends from nostril to occiput, succeeded by a broad black line, which passes under the eye to over the ear-coverts; immediately in rear of this rises a bright chestnut mark, running indistinctly over the hind neck. Throat pure white. Breast white, with oblong drops of black, the feathers being in reality black fringed with white. Below the breast and sides of belly fine chestnut-red, mixed with dark olive; tibial feathers and vent dingy olive-brown. Wing-feathers light hair-brown, broadly margined with rufescent olive-brown. The fully moulted tail-feathers narrow at their tips, light hair-brown, faintly barred with deeper hue, all margined exteriorly with brownish-olive near their bases, the two centrals for the greater part of their length. Axillaries reddish-white. Quills underneath with their inner edges whitish, washed with pale salmon-colour. Bill pale-yellow, brownish-black on the basal half of the culmen. Legs and feet leaden-grey. Irides yellowish.

♂ & ♀, length about 7·375; wing 3; tail 3·4, of 10 feathers.

In two out of the three specimens the tail is worn at the tips, presenting broad obtusely ended feathers. The female is not so rufescent as the male on the upper parts, and wants the red on the hind neck. In one there is more white on the belly, and the red of the flanks is turned into spots by the feathers being fringed with white.

Among the hedges and copses of central Hainan I several times came across small parties of this bird, babbling to themselves as they crept through the twigs and leaves. They were not so bold in habits as *P. musicus* of Formosa; and I did not see them throw their tails up, as is done by *P. stridulus* of South China. The freshly moulted tail so altered the appearance of the bird that I thought at first that there were two species; but on shooting both I discovered what led to the mistake. The Hainan bird is smaller than *P. musicus*, and has its nearest ally in *P. stridulus*.

72. *HYPSIPETES PERNIGER*, sp. n. (Plate IX. fig. 2.)

General colour deep black, the feathers broadly glossed on their margins, reflecting an obscure tint of deep greyish-green; quills and tail without the gloss. Bill and legs coral-red; claws brown. Irides deep chestnut.

Length about 9; wing 4.9; tail 4.5, of 12 broad feathers.

When Mr. Gould was about to describe the *Hypsipetes* from Formosa (*cf.* Ibis, 1863, p. 287), I called his attention to its dark colour as compared with the Indian species; and he proposed for it the title of *H. nigerrimus*, remarking at the same time that a blacker bird was sure to turn up some day. Sure enough, here it is! On the 10th of February, as I was returning from the small Roman-Catholic station at Lingshanshe, distant ten miles from Kiung-chow-foo, to my quarters in that city, I looked into a bamboo-copse and saw above me one of this species. It was sitting quietly among the leaves and warbling to itself. I got the bird, and was delighted to see, by the absence of grey from its wings and tail, that I had got the prophesied species. In form it is most nearly allied to the Formosan bird; but its notes differ from those of that species. I found it abundant in central Hainan, and also in the jungles of the south. It goes about in parties, often of a considerable number, and keeps much to the tops of trees. Some of the gunboat people bought a couple of them alive at Hoitow (W. Hainan); but they soon pined to death.

73. *HEMIXUS CASTANONOTUS*, sp. n. (Plate IX. fig. 1).

Allied to *H. flava*, Hodgs. (Jerd., B. Ind. ii. p. 80), of Ne-

pal and Bootan, having a similar form, with lanceolate coronal feathers and longish Ixine bill, but differing greatly from it in coloration.

Crown black, tinged with reddish-brown, strongly on the forehead. Sides of face and all upper parts, including scapulars, light brownish-chestnut. Throat pure white; breast and flanks brownish-grey; belly and vent creamy-white; axillaries and inner edges of quills the same, the former tinged with primrose-yellow. Wings and tail hair-brown; the secondaries and their coverts margined with greenish-yellow, and a few of the primaries lightly edged with same, rectrices more faintly margined for the greater part of their lengths with the same. The ~~inner~~ ^{median} tail-coverts are of the same hue as the tail. Bill black. Irides blood-chestnut. Legs and claws brown.

Length about 8.25; wing 4.125; tail 4, of 12 feathers.

At Tai-ping-size (Central Hainan) I detected this new Bulbul among the tops of the high trees of the forest. It was somewhat scarce, occurring two or three together, and crying in short notes to one another as they went along. Near Lingmun, further up the mountains, our party halted by a stream to recover ourselves from the heat and toil of climbing. A tall fig-tree stood near; and to the top of this flew a Bulbul, and kept repeating what I presume was its song. It might be syllabled "to-to te-wee." I shot it, and found it to be this species. Its habits confirm the idea conveyed by its form, that it should find a place between *Hypsipetes* and typical *Ixus*.

74. CRINIGER PALLIDUS, sp. n.

Similar in form to *C. flaveolus* (Gould) of the Himalayas (Jerd., B. Ind. ii. p. 82), and possessing like markings on the throat and sides of face; but the Indian bird is much yellower on the back, and has the lower parts rich yellow.

Region of the eye and cheeks blackish-grey tinged with olive. Long acuminate feathers of the crest dull reddish-olive. Upper parts dull olive, rufescent on the wings, rump and tail, which are similar in colour to the crest. Hidden, or inner, parts of wing-feathers hair-brown. Throat greyish-white. Under parts dull olive, with centre of belly dingy primrose, more

buff-coloured on the tibiæ and vent. Carpal edge of wing primrose. Axillaries yellowish, and under edges of quills whitish, both with a wash of light salmon-colour. Bill blackish, pale on the lower mandible. Legs and toes light yellowish-brown.

Length about 8·5; wing 4·125; tail 4·125, of 12 slightly graduated feathers.

I often saw parties of this species in the woods of Tai-ping-sze (Central Hainan). They went about the underwood calling to each other in low soft notes. The iris of one shot there I have noted as "light umber-brown." Near Lingmun, further inland, they resorted in some numbers to a big tree under which I sat sketching; and here I jotted down the iris as "greyish-brown, with a paler circle round the pupil." Among the jungles of Yu-lin-kan (S. Hainan) they occurred again.

75. *IXUS HAINANUS*, sp. n.

On landing at Naochow island the first bird we saw was a green Bulbul, and I noticed at once that it wanted the occipital white to its black crown. Bulbuls were common at Naochow, and we shot several, but I sought in vain for a "White-bonnet;" they were all black-capped. Throughout Hainan it was the same, always the "Black-cap," but, so far as I could see, with precisely the same notes and habits as the ordinary Chinese "White-bonnet." The description of the Chinese bird *I. sinensis*, before given by me (Ibis, 1863, p. 65), will do equally well for this bird, except as regards the head. The Hainan bird has no occipital white, the whole crown to the nape being black. Its bill also is stouter. Irides deep brown.

Length about 7 in.; wing 3·5; tail 3·3.

On leaving Hainan the gunboat crossed the strait and anchored in a bight of the lowlands of the Luichow peninsula. Here we found on a hedge the "Black-cap" and the "White-bonnet" sitting side by side. Naochow island is 40 miles from Hainan, and only 5 from the Luichow peninsula; and the "Black-cap" alone occurred there. Hainan is 15 miles from the peninsula; and the "Black-cap" alone occurred there. Surely it could not be that *I. sinensis* feared to cross so narrow

a sea! Certainly not! for, midway between Naochow and Hongkong, we found it on the island of Hoe-ling, and it occurs in all the islands off the south coast of China and abundantly in Formosa, which is 80 miles from the nearest point on the China coast. The exclusive occurrence of the "Black-cap" at Naochow might suggest a remote connexion of that island with Hainan while the southern portion of the peninsula was under water. Under the circumstance of its occurring also in the peninsula, I do not consider it at all necessary to fly to geological transformations to account for its existence in the small island. It strikes me that the facts are more easily explained by imagining an early colonization of Hainan by a few wanderers of *I. sinensis*, which in their isolation lost their occipital character and, as the Chinese opened and cultivated the country, so increased and multiplied that their surplus folk were compelled to invade the Luichow peninsula, and extend their range to Naochow island; for be it remarked that this type of *Ixus* is a bird that affects cultivation and the neighbourhood of men, and the Chinese commenced settling in Hainan some centuries B.C., as their records show. The southward irruption of the unchanged *I. sinensis* we must in such case allow to be quite recent; or, from their powers of reproduction, they would soon have formed in sufficient numbers to invade the new territory, since the conditions of life must be very much the same on either side of the narrow channels. At Luichow they may possibly interbreed, but I saw no hybrids.

One other supposition occurs to me, which may be the right one to explain the facts,—that the typical *I. sinensis* was the original occupier of the whole neighbourhood, including the peninsula and the small and large island, and that it is now being superseded by the later-formed race, which being produced in the locality, and especially adapted to its circumstances, multiplies and extends, while the original stock is decaying.

The Chinese writers of some centuries back call the Hainan *Ixus* by the same name as the Chinese race; and one author gives a joke which annoyed a celebrated old gentleman with a bald head. The latter was sitting with some friends in an

harbour, when a Bulbul flew over. One of the friends asked what bird it was, and another replied, "The white-poll'd Grandsire," as *I. sinensis* is named by the Chinese literati. The friends laughed; but the old gentleman did not like it*. Some might accept this little story as evidence that in those days the true "White-bonnet" prevailed in Hainan. But, judging from their works on natural history, I do not think the Chinese students would be careful enough to notice the small but important difference that distinguishes the Hainan from the Chinese bird. They would bring their traditions about the "White-poll" from China, and apply them to the representative bird they found in Hainan. At all events, the present natives of Hainan still call the black-capped race by the old term "White-poll."

76. *PHYLLORNIS LAZULINA*, sp. n.

This is so close to *P. hardwickii* (Jard. & Selby), of the South-eastern Himalayas (Jerd. B. Ind. ii. p. 100), that I almost hesitate in assigning it specific rank. It mainly differs from its Indian ally in having the head greyish-green and in the blue of its shoulder being of another hue.

Male. Upper parts fine grass-green, washed with orange-yellow on the hind-neck. Wings and tail deep violet-purple; the former with a shoulder-bar of rich cobalt blue, and with the visible portions of the tertials, secondaries, and their coverts green like the back, the primaries being tipped with a fainter hue of the same. Tail with the two middle feathers inwardly edged for the greater part of their length with fine deep green; outwardly nearer their bases. Lore, space under the eye, throat, and breast black, washed with deep purple; moustache-

* The whole story is thus given in the '*K'ung-shan-Heen Gazetteer*':—"Choo Kokih was in the reception-hall of Lord Woo, when this* bird flew past. Lord Woo asked what bird it was. Choo replied, 'The White-poll'd Grandsire.' Chang Chao, an old gentleman also present, suspecting that Choo was joking at his expense, said, 'I have never heard of a bird called White-poll'd Grandsire. Perhaps you know another called White-poll'd Grandmother!' Choo at once rejoined, 'No! but you must know the Parrot's Mamma [Cockatoo]. Would you like to have also a Parrot's Papa?' Poor Chang was perplexed, and the rest of the company amused."

streak purplish cobalt-blue. Under parts rich orange-saffron, marked with green on the sides of the belly. Carpal joint edged with cobalt-blue. Wings and tail light hair-brown underneath. Bill deep brownish-black. Irides deep brown. Legs and toes leaden grey.

Length about 7 inches ; wing 3·7 ; tail 3, of 12 feathers.

Female. General colour green, greyish on the head, and tinged with yellow on the under parts. Her moustache-feathers are tipped with purplish-cobalt. Her tail is green, with brown stems to the feathers, and the inner or concealed halves of her wing-feathers are hair-brown.

Wing 3·5 ; tail 2·8.

On returning to Tai-ping-sze (Central Hainan) from the inner mountains, I was watching for birds by the side of a cottage ensconced in a wood, when suddenly I heard a long loud chatter which was quite new to me. I turned in the direction of the noise, and saw what seemed to be a squirrel. On staring more fixedly I made it out to be a bird hanging head downwards on a creeping plant that entwined a tree, and reaching after insects on its flowers. I trembled with excitement when I picked up a fine male of this very lovely species. I did not see it again till we reached Yu-lin-kan (S. Hainan). Here, among the jungles, while we were refreshing ourselves by a stream, to which our savage guide (before mentioned) had led us, three or four of these birds appeared in the trees overhead, uttering loud mellow notes. I scrambled about through the tangles, and succeeded in getting a pair.

[To be continued.]

XVIII. On *Existing Remains of the Gare-fowl* (*Alca impennis*). --

By ALFRED NEWTON.

IN consequence of a notice in 'The Ibis' (1868, p. 342) of the list of remains of *Alca impennis*, published by M. Victor Fatio in the 'Bulletin de la Société Ornithologique Suisse' (ii. pt. 1, pp. 80-85), that gentleman has asked me to furnish him with such further information as I can supply on the subject.

Acceding to his request with the greatest pleasure, I think such emendations of that list as I am in a position to make, together with a general summary of their results, may not be void of interest in this country also; and I therefore publish here, in the briefest manner possible, the particulars of which I am possessed, M. Fatio having kindly favoured me with the additional information he has obtained in the meantime.

Easy as the task may seem, it is in fact very difficult (as has been already stated in the notice to which I have referred) to compile a perfect list of the skins, bones, and eggs of this bird which exist in collections. For more than ten years, as many of my friends know, it has been my object to do this, and, ably assisted of late by Mr. G. D. Rowley, I have accumulated a vast mass of materials in my endeavours to trace the history of each specimen. I am still far from having obtained this desirable end, owing to many obstacles which present themselves. Upon these, however, I will not dwell; their existence is not very creditable to the candour of ornithologists, though the number of persons to whom they are due is small; and it is enough to say that I hope they may in time be overcome, so as to enable Mr. Rowley and myself to append to our contemplated 'Monograph' a really good historical catalogue.

Setting aside for the present all consideration of those specimens whose existence, though indicated to us, must still be regarded as extremely doubtful, the following remarks will, I think, fairly bring M. Fatio's list to the level of the information possessed by Mr. Rowley and myself. At the same time I must not be understood as pledging myself to a belief in the existence of all those that I have left unchallenged. To facilitate comparison, I follow M. Fatio's arrangement; and in citing authority for my statements I intentionally limit myself to as much as is sufficient for my present purpose. It is in nearly every case that of an eye-witness.

SKINS.

GERMANY.—*Add*:—

1. Brunswick. University Museum. Seen by myself.
1. Grätz. Johanneum. J. W. Clark, *in litt.* 15 Oct. 1868.
1. Strasburg. Town Museum. Seen by myself.

1. Stuttgart. Museum. Dr. Krauss *in litt.* 7 Nov. 1867.

Deduct:—

2. Flensburg. Of *three* formerly in Mechlenburg's collection *two* are now in England (Mr. Hancock's and Mr. Champley's collections). The remaining *one* is still, I believe, in the Museum of Flensburg.
1. Mühlstadt. This seems to be included by mistake, as Herr Pässler makes no mention of it (J. f. O. 1860, pp. 58–60).

FRANCE.—*Add:—*

1. Amiens. Town Museum. Seen by myself.
1. Lille. Town Museum. L. O. Gaillard, *Ibis*, 1862, p. 302.
- ? 1. Metz. Town Museum? Prof. Reinhardt has kindly informed me that in 1842 Malherbe received a specimen from the Royal Museum of Copenhagen. I believe that Malherbe's collection is now at Metz, but I am not sure of the fact.
1. Vitry. The Count de Riocour. *Ipsæ in litt. ad V. Fatio*, 9 Apr. 1869.

Note. Delamotte's specimen is now in the Abbeville Museum, where I have seen it.

ITALY.—*Add:—*

1. Pisa. Town Museum. E. P. Wright, *ex ore*, Sept. 1863; E. C. Taylor, *in litt.* 4 Sept. 1866.
1. Veneria Reale. Private collection of the King, obtained in 1867 from that of the late Pastor Brehm. G. Hartlaub *in litt.* 15 May, 1867; P. L. Sclater *in litt.* 27–29 Jan. 1869.

NORWAY.—*Deduct:—*

2. Christiania. University Museum. Inserted by mistake, the passage in Prof. Steenstrup's admirable essay (*Naturh. Foren. Vidensk. Meddelelser*, 1855, p. 78) referring to the two of which physiological preparations may be seen in the Copenhagen Museum (*cf. Ibis*, 1861, p. 392). The skins are elsewhere included.

Note. Herr Aall's specimen is at his house, at Næs, where I have seen it, and not at Christiania.

SWEDEN.—*Add:—*

1. Lund. University Museum. J. Wolley *in MS.*
1. Stockholm. Royal Museum. Seen by myself.

UNITED KINGDOM.—*Add:—*

1. Mr. Champley. From Mechlenburg's collection (*ut supra*).
1. Mr. Crichton. } Seen by myself.
1. Mr. Foljambe. }
1. The late Mr. Hoy. A. D. Bartlett *ex ore*; C. R. Bree *in litt.* 2 Oct. 1867.
1. The late Mr. Lombe. H. Stevenson *ex ore*.
1. Mr. Naylor. B. Leadbeater *ex ore*.

1. Mr. Roake .. }
2*. Mr. Rowley } Seen by myself.

Deduct :—

1. British Museum, "Northern Zoological Gallery." As is probably well known to all ornithologists in this country, the British Museum only contains two skins; and Herr Preyer's statement (J. f. O. 1862, p. 77), though clearly to that effect, has been accidentally misunderstood. (*Cf.* Nat. Hist. Rev. 1865, p. 473.)

BELGIUM.—*Add* :—

1. Brussels. Town Museum. . . . }
1. Baron de Selys-Longchamps. . } Seen by myself.

PORTUGAL.—*Add* :—

1. Lisbon. Royal Museum. A. C. Smith, *Ibis*, 1868, p. 457.

UNITED STATES.—*Add* :—

1. Washington. Smithsonian Institution, from Herr C. E. Götz, of Dresden. G. A. Frank, *in litt.* ad G. D. Rowley; S. F. Baird *in litt.*
1. Philadelphia. Mus. Acad. N. S. Seen by myself.
1. Poughkeepsie. Vassar College, from the late Mr. Giraud's collection, formerly Audubon's (*cf.* *Ibis*, 1861, p. 398, note). E. Coues, *Proc. Ac. N. S. Philad.* Jan. 1868

Summary.

Germany 20	Norway. 1	Belgium 2
Denmark 2	Sweden. 2	Portugal 1
France . . 7 (or 8?)	United Kingdom 22	United States. 3
Holland. 2	Russia 1	
Italy 5	Switzerland . . 3	71 (or 72?)

BONES.

I shall here attempt a complete list, instead of merely adding to or correcting that of M. Fatio.

Skeletons.

GERMANY.

1. "Breslau (in part)." R. Champley, *Ann. & Mag. N. H.* 3rd ser. xiv. p. 236.

FRANCE.

1. Paris. Muséum du Jardin des Plantes (very perfect). Seen by myself.

* One of these formerly belonged to Count von Westerhold, and thus is, doubtless, the same as that mentioned by Dr. Altum (*J. f. O.* 1863, p. 115, note).

ITALY.

1. "Florence (in part)." R. Champley *ut supra*.

UNITED KINGDOM.

1. London. British Museum (very perfect) }
 1. " Roy. Coll. of Surgeons (very perfect) } Seen by myself.
 1. Coll. A. & E. N. Wants the limbs and ribs of the left side, and metacarpals and phalanges of the right. In other respects perfect. The specimen described by Prof. Owen (Trans. Zool. Soc. v. pp. 317-335, pls. li., lii.).
 1. ? W. Waterman *in litt*.

UNITED STATES.

2. Boston. Harvard Univ. Mus. Bishop of Newfoundland *in litt*.

Detached Bones.

DENMARK.

- Copenhagen. Royal Museum. Bones of 3 individuals found in Danish kitchen-middens. Seen by myself.
 —. —. Bones of several (perhaps 5 or 6) sent from Funk Island by Stuvitz. Seen by myself.
 —. —. Remains of 2 individuals killed in Iceland in 1844, preserved as physiological preparations. J. Steenstrup, *op. cit*.

NORWAY.

- Christiania. University Museum. Bones of several individuals (perhaps 8 or 10) sent from Funk Island by Stuvitz. Seen by myself.

UNITED KINGDOM.

- London. British Museum. Bones of 2 individuals found in kitchen-middens in Caithness. Nat. Hist. Rev. 1865, p. 470.
 —. Royal Coll. of Surgeons. 1 cranium. Seen by myself.
 Coll. A. & E. N. Bones of at least 8 individuals, found in kitchen-middens in Iceland, by the late Mr. Wolley and myself (Ibis, 1861, pp. 394-396).
 Newcastle on Tyne. Museum. } Bones extracted from skins by Mr.
 —. Mr. Hancock } Hancock. Seen by myself.

UNITED STATES.

- ? Bones of at least 7 individuals from kitchen-middens in Maine and Massachusetts. J. Wyman, Am. Nat. i. pp. 374, 578.

*Summary.**(Skeletons.)*

Germany 1	|	Italy 1	|	United States . . 2
France 1	|	United Kingdom 4	|	—
				9

(Detached Bones.)

Denmark 10 (or 11 ?) individuals.	|	United States . . 7 individuals.
Norway 8 (or 10 ?)	|	—
United Kingdom 13	|	38 (or 41 ?)

Eggs.

The enumeration of the eggs is attended with the greatest difficulty of all. It is very possible that at least *five* more exist than I have been able to ascertain beyond doubt. Every precaution has been now taken not to count the same specimen twice, which is very necessary, since so many have of late changed owners.

GERMANY.—*Deduct* :—

1. Flensburg. Now in Mr. Champley's collection (*ut supra*).
1. Thienemann's collection, already counted by M. Fatio as in the Dresden Museum, where I have seen it.

FRANCE.—*Add* :—

1. Angers. The Count de Baracé, as he himself has kindly informed Mr. Rowley, possesses *three*, being *one* more than mentioned by M. Fatio.

UNITED KINGDOM.—*Add* :—

2. Edinburgh Museum. H. W. Feilden, Ibis, 1869, p. 358.
1. Lady Cust. W. Yarrell, *ex ore*.
1. Mr. Rowley. Seen by myself.
1. Mrs. Wise. J. Wolley, in *MS*.

Deduct :—

1. "Mr. Troughton," being *one* of the *three* in Lord Garvagh's collection already counted by M. Fatio.

Note. *Four* of the *seven* enumerated by M. Fatio as belonging to the Royal College of Surgeons have passed into the collections of Messrs. Braikenridge, Burney, Crichton, and Rowley. That of the late Mr. Wilmot is, I believe, in the possession of Mr. G. L. Russell.

UNITED STATES.—*Add* :—

2. Philadelphia. Mus. Acad. N. S. Seen by myself.

Summary.

Germany.....	8	France.....	7	Switzerland ..	2
Belgium	2	Holland	2	United States..	2
Denmark.....	1	United Kingdom	41		—
					65

Therefore the existence is recorded of 71 or 72 skins, 9 skeletons, detached bones of 38 or 41 different birds, and 65 eggs.

Magdalene College, Cambridge,
21 March, 1870.

XIX.—*Notices of Recent Ornithological Publications.*

1. ENGLISH.

SINCE our last notice of 'Exotic Ornithology' * (Ibis, 1869, pp. 109, 110) five additional parts have been issued, and the work brought to a happy conclusion. The species figured herein are as follows :—

PART IX. December, 1868.

<i>Pyrgisoma cabanisi.</i>	<i>Accipiter bicolor.</i>
—— <i>kieneri.</i>	<i>Turdus gigas.</i>
<i>Oxyrhamphus frater.</i>	—— <i>albicollis.</i>
<i>Thyrorhina schomburgki.</i>	—— <i>leucomelas.</i>
<i>Chlorophonia calophrys.</i>	

PART X. April, 1869.

<i>Turdus crotopezus.</i>	<i>Bucco striolatus.</i>
—— <i>albiventris.</i>	<i>Porzana castaneiceps.</i>
—— <i>phæopygus.</i>	<i>Attagis chimborazensis.</i>
—— <i>gymnophthalmus.</i>	<i>Formicivora strigilata.</i>

PART XI. June 1869.

<i>Conurus hoffmanni.</i>	<i>Accipiter guttatus.</i>
<i>Rallus antarcticus.</i>	<i>Ampelion arcuatus.</i>
—— <i>semitlumbeus.</i>	<i>Asturina nattereri.</i>
<i>Pitylus humeralis.</i>	—— <i>ruficauda.</i>

PART XII. August, 1869.

<i>Asturina pucherani.</i>	<i>Thripadectes flammulatus.</i>
—— <i>plagiata.</i>	<i>Icterus abeillæi.</i>
<i>Botaurus pinnatus.</i>	<i>Centropelma micropterum.</i>
<i>Tigrisoma fasciatum.</i>	<i>Centrites oreas.</i>

PART XIII. November 1st, 1869.

<i>Gallinago imperialis.</i>	<i>Querquedula puna.</i>
—— <i>nobilis.</i>	<i>Merganetta turneri.</i>

Without noticing in detail the many species here enumerated, we may mention that several of the subjects chosen serve to illustrate certain monographs recently elaborated by the authors in the Zoological 'Proceedings.' The Plate now given, represent-

* *Exotic Ornithology.* By PHILIP LUTLEY SCLATER, M.A. &c., and OSBERT SALVIN, M.A. &c. Parts ix.-xiii. London: Imp. 4to.

ing the two species of *Pyrgisoma*, together with Plate lxiv. illustrate the paper on this genus (P. Z. S. 1868, p. 324). The various Rails, too, have all been selected in special reference to the authors' admirable monograph on the American *Rallidæ* (P. Z. S. 1868, pp. 442-470). The most remarkable species among them is that to which the generic name *Thyrorhina* is given. It seems to stand alone in the *Rallidæ*, having the nasal openings operculated, and a median septum completely dividing the nostrils from one another. Then we have four *Asturinae* figured in illustration of another monograph (P. Z. S. 1869, p. 130). Several of these, as separated, appear to be very closely allied to one another; but the geographical distribution of the forms favours the authors' view. The *Turdidæ* figured, seven in number, though not affording attractive plates so far as colour is concerned, will be of considerable service in determining the South-American species, about which great confusion seems to have prevailed, if we may judge by the string of synonyms borne by some of the species.

We must not omit mentioning the monographic lists appended to several of the species figured, as they will prove to the student perhaps the most useful portion of the work. We now have:—a list of the species of *Attagis* accompanying the Plate of *A. chimborazensis*; a list, with concise diagnoses, of the three small Water-Rails allied to *Rallus virginianus*; and a complete list of the species comprised in the genus *Pitylus*, giving their synonymy, diagnoses, and distribution, together with a plate of *P. humeralis*, a species lately described by Mr. Lawrence (*cf.* Ibis, 1868, p. 114). The synonyms of the larger group of North- and South-American species of *Accipiter* are also collected together, and the species (seven in number) separated under three sectional headings. The genus *Ampelion*, with its four species, is treated in like manner. The two American species of *Botaurus* do not require a tabular list; and the letterpress answers every purpose in discriminating the interesting South-American bird from its Northern ally, while a synopsis of the genus *Tigrisoma* is added to the detailed account of the species figured.

For the singular Grebe represented on Plate xev. the new generic name of *Centropelma* is proposed. Its wings are so

minute in proportion to its body as probably to render it incapable of flight. This very interesting species, first described by Mr. Gould (P. Z. S. 1868, pp. 220, 221), seems to be restricted in its range to the highland lake of Titicaca, in Bolivia. Accompanying the plate on which *Gallinago imperialis* is figured, we find the general divisions into which the American Snipes (nine in number) are capable of separation; and with the account of the following species, *G. nobilis*, the full synonymy of the whole of these species is given, to which a few short notes on each are added. The two final plates of the work represent as many Ducks—one the little-known *Anas puna* of Tschudi, and the other *Merganetta turneri*, a newly described (P. Z. S. 25 Nov. 1869) species of this singular genus.

The present volume, as now completed, contains illustrations of South-American birds only; but we venture to express a hope that, if a further series of plates is contemplated, the subjects may be selected from other parts of the world, though doubtless the Neotropical avifauna could afford sufficient materials for several such volumes as the present.

We notice with pleasure that several of the continental museums have lent specimens to the authors, to furnish some of the subjects of the illustrations—which being thus made from original type-specimens, are of additional value.

Mr. Rodd has brought out a new edition of the pamphlet* we formerly mentioned (Ibis, 1868, p. 100), wherein appear not only the additional manuscript notes of which we then spoke, but also some other observations of no small interest—those in the “Appendix” especially—bringing the whole up to the present level of his information. Having so lately remarked upon the ornithology of Cornwall, we need not now enlarge upon that subject, particularly as Mr. Rodd’s publication, though one which cannot be neglected, still leaves much to be desired.

* ‘A List of British Birds, as a Guide to the Ornithology of Cornwall.’ &c. By EDWARD HEARLE RODD. Second edition. London and Penzance: 1869. 8vo, pp. 51.

The Natural-History Society of Glasgow is one not much known to southron ornithologists, nevertheless its members display a laudable amount of activity in the good cause, as the two parts of its "Proceedings"* already published bear witness. Though founded in 1851, it was well advanced "in its teens" before an account of its doings was given to the world; and when at last this was effected, it was thought expedient to begin with the session of 1859-60. This arrangement, we are told, excludes only one "important subject"—the occurrence of the North-American *Regulus calendula*, an example of which, said to have been shot on the shores of Loch Lomond, was laid before the Society in April 1858, a fact already recorded by Mr. Gould (P. Z. S. 1858, p. 290) and Dr. Bree (B. Eur. ii. p. 109). Probably the future of a Society will be none the less prosperous and productive for feeling its way slowly and cautiously at first; we trust that it is now become firmly rooted; and certainly its present efforts fully deserve encouragement. The most important article contained in these two parts is, indubitably, that on the birds of Ayrshire and Wigtownshire, a separately printed copy of which (with some additions) we noticed in our last number (*anteà*, p. 125); but a great many other communications well deserve the notice of British ornithologists. We have not space to enumerate them here; but there is less reason why we should; for we doubt not they will be all duly incorporated in the work on the Birds of the West of Scotland, which we shortly expect from the Society's indefatigable secretary, Mr. Robert Gray. We may, however, mention two notices, both due to Mr. W. C. Angus, of Aberdeen—one (p. 207) recording the occurrence in that shire of *Buarremon schistaceus* (Boissonneau), which must, we think, have escaped from confinement, and the other (pp. 209-211, pl. iii.) of *Zonotrichia albicollis* (Gmel.). This last, by Mr. Angus's courtesy, we have lately had the opportunity of exhibiting at a meeting of the Zoological Society of London, and it may very possibly have crossed the Atlantic on its own account.

* 'Proceedings of the Natural History Society of Glasgow,' vol. i. part i. 1868, pp. 228, vol. i. part ii. 1869, pp. 229-384.

Mr. Eyton has reprinted the osteological plates, thirteen in number, which were given years ago in his 'Monograph of the *Anatide*;' to these five new ones, representing the skeletons of *Cereopsis novæ-hollandiæ*, *Dendrocygna arcuata*, *Biziura lobata* (♂ and ♀), and *Erismatura australis*, are added, and the whole published as a 'Supplement' to his great work on the osteology of birds*, of which we have before announced the completion (Ibis, 1868, pp. 98, 99).

Mr. A. C. Smith has done well in adding to his pleasant little book on Portugal† a chapter containing a reprint of his paper on the birds of that country, which appeared in this Journal (Ibis, 1868, pp. 428-460). He has further done well in incorporating therewith a translation of the observations on, and additions to, the same, made by Prof. Barboza du Bocage, and lately mentioned by us (*suprà*, p. 134), so that the whole forms a useful epitome of what has hitherto been recorded with respect to Portuguese ornithology. Mr. J. H. Gurney, however, informs us that he can add yet one other species to the list—to wit, *Buteo desertorum*, of which he lately saw in the Museum at Lille two specimens from Portugal, where its occurrence is a matter of probability; for we believe that Mr. Howard Saunders has obtained it in Spain.

2. FRENCH.

We have already (*anteà*, p. 122) alluded to the ingenious experiments on the flight of birds by Prof. Marey of the Collège de France, a full account of which, with the results at which he arrived, is printed in the 'Revue des Cours Scientifiques' for 1869 (Nos. 37, 38, 41, and 44); and it now gives us much pleasure to give a very brief abstract of his investigations. The chief apparatus for showing the real character of the motions of the wing consists of two air-tight basins (*cuvettes*), with tops of

* Supplement to Osteologia Avium; or a Sketch of the Osteology of Birds. By T. C. EYTON, Esq., F.G.S., F.Z.S. Wellington, Salop: 1869. 4to, 18 pls.

† Narrative of a Spring Tour in Portugal. By Rev. ALFRED CHARLES SMITH, M.A. London: 1867. 8vo, pp. 220.

india-rubber like little drum-heads, and connected by an air-tight tube of the same material, so that, the top of one being raised or depressed, the top of the other will be moved almost instantly in the reverse manner. On the top of one rests the short arm of a lever, the long arm of which carries a point just touching a moving strip of smoked paper or glass so as to record thereon the movements generated through the tube, while the top of the other basin is attached to the bird, the subjects of the experiments being Pigeons, Wild Ducks, Buzzards, and Harriers, which were induced to fly from one end of a long room to the other. In this manner one "drum-head," being pressed against the bird's breast, was made to record the contractions of the pectoral muscles; or two "drum-heads," connected by a rod, fixed to the wing registered its actual motion relatively to the bird; while, again, by means of a little weight fastened to the "drum-head" attached vertically to the bird's back, any change in the velocity of the flight produces a jerk, which shows its amount; and, lastly, the same "drum-head" being attached horizontally, each rise or fall of the bird is indicated. Besides this mechanical apparatus an electrical one was also used, so as to signal each stroke of the wing and its duration. From a number of experiments M. Marey arrives at these conclusions:—(1) that the down-stroke lasts longer than the up-stroke: (2) that the axis of the wing moves, relatively to the bird (a Buzzard flying almost horizontally), from the beginning of the down-stroke, nearly vertically downwards, then slightly forwards, then downwards again, and more and more backwards; while during the up-stroke it moves at first backwards, but towards the end forwards again into its original position: (3) that the wing at the beginning of the stroke, partly from the arrangement of the muscles, and partly from the resistance of the air, turns rapidly about its axis; and whereas before the beginning of the down-stroke it slopes forwards and upwards, the direction during the greater part of it is forwards and downwards; towards the end of the down-stroke it turns back again, and at the end is nearly horizontal, while during the up-stroke the wing slopes greatly forwards and upwards: hence it appears that, during the down-stroke, the bird receives an impetus for-

wards and upwards, while during the reverse movement the position of its wings tends somewhat to arrest its progress; but as it still slides upwards, what is lost in speed is gained in elevation.

M. Marey makes some comparisons between the flight of large and of small birds, and shows that, on the whole, the work done *per* stroke is proportional to the bird's weight; but, with due deference to him, he appears to overlook the fact that, as the stroke of the larger bird takes a longer time, the actual work done during any given time is less, and, unless the smaller bird has a very great surplus of strength (which there is no reason to think), a similarly-built bird of above a certain weight would be unable to fly at all—soaring, which is chiefly dependent on other causes, being left out of the question. The only escape from this difficulty seems to be in the supposition that the tip of the wing of the larger bird strikes the air with a velocity absolutely greater than that of the smaller one, in which case a moderate increase of velocity in proportion to the weight would suffice, as the resistance of the air is here nearly proportional to the square of the velocity.

In a prior course of papers M. Marey had elucidated the flight of insects, which, though mechanically simpler, presented great difficulties, from the small size of the subjects of his experiments; and the whole undoubtedly forms the most important contribution to our knowledge of the subject of flight that, with the exception of the standard work of Precht*, has ever been made.

3. DUTCH.

As our readers must by this time be able to judge for themselves of the merits of Mr. Keulemans as an ornithological artist, it would seem somewhat presumptuous for us to say much of the plates which decorate his work † written for the bird-loving public of his own nation, whether scientific or not.

* Untersuchungen über den Flug der Vögel. Wien: 1846.

† Onze Vogels in Huis en Tuin, beschreven en afgebeeld door J. G. KEULEMANS, Adsisistent aan 's Rijks Museum van Natuurlijke Historie. Deel i. Leyden: 1869. Roy. 8vo.

It contains seventy plates, representing nearly as many species of well-known birds, indigenous, migratory, or introduced, with from two to four pages of popularly-written letterpress on each ; but, unlike most of the popular works on natural history which the press of our own country too often produces, this book is comparatively free from the absurd blunders to which the common literary hack of the English publisher is so exceedingly prone. The errors we have found in it are generally of a venial sort, and none are such as to require correction at our hands. If we were forced to criticise Mr. Keulemans's drawings, we should say that he was less happy in delineating the aspect of the sprightly *Passeres* than that of other groups. None but an attentive observer of live birds can fully appreciate the truth of a remark made long ago in this Journal by Mr. Wallace (*Ibis*, 1864, p. 41), that the apparently trifling characteristics of peculiar attitudes and actions are often most significant in revealing the true affinities of various groups of Birds ; and the vivacity, or (as Prof. Lilljeborg, we suppose, would say) the irritability* of the Passerine order is indeed a stumbling-block to many a draughtsman who succeeds well enough with the generally more staid Picarians, Accipitrines, and so forth—birds which, however rapid may be their actions when searching for food, yet, when perched, are wont to stand at “attention” like well-drilled soldiers, or at most to indulge in the mechanical motions of puppets on wires. Our readers must not, however, imagine that we wish them to infer that all Mr. Keulemans's drawings of *Passeres* are wanting in spirit ; there is the onslaught of three Fire-crested Wrens upon the relatively huge caterpillar of a *Sphinx*, which is as lively as any one could desire. The colouring of the plates is generally good, but in some overdone—as in those representing the Siskin and Partridge, for instance. Being a patriotic Hollander, the author of course includes the portrait of a Stork, and in this, we think, he has been most happy : the attitude of the figure, the outlines of the bill, the partly contracted toes of the poised foot, are all as true to nature as is the comically-grave expression of the bird's countenance.

* Cf. Proc. Zool. Soc. 1866, p. 7.

Heer J. P. van Wickevoort Crommelin continues in the 'Archives Néerlandaises' his series of careful papers on the ornithology of the Low Countries. Two of these, published during the past year, are now, by his kindness, before us. The first, headed 'Notes ornithologiques sur la Faune des Pays-Bas,' in commenting on the works of Prof. Schlegel (*cf.* Ibis, 1859, p. 460) and HH. Bemmelen and Albarda*, contains some remarks on the nomenclature of various European species, which is in such a tangled state as really to form a *dignus vindice nodus*. The second, equally interspersed with the same kind of criticism, is entitled 'Remarques sur la Faune Ornithologique de la Hollande,' and consists of observations made in that country, which may be regarded as supplementary to those of Baron Droste in his work lately noticed by us (*antea*, p. 128). Each paper displays as much erudition as careful observation on the part of the author; but acceptable as they are to ornithologists, it does not seem to us that any of the facts recorded require especial mention here. We must, however, protest against some of Herr Crommelin's views of scientific nomenclature, and in particular against the importance which he attaches to what he regards as "genera" established by Gesner and Willughby, and in the 'Vorstellung der Vögel Deutschlands' of J. L. and J. C. Frisch. Those authors had plainly, as may be seen by consulting their works, no idea of any thing like a scientific "nomenclature," such as was founded by Linnæus: they of course called the birds they figured and described by names, as all writers in all ages have done, and they used for those birds Latin and French as well as German or English names; but the first are simply translations of the vernacular, and their adoption puts an end to the beautiful method, no less philosophical than practical, invented by Linnæus. There may be some reason for biologists to hesitate as to the particular edition of the great Swede's works they should take for their starting-point; but surely all will allow that priority has its limits as well as its rights, and in this matter the "ancients" are *ultra fines reipublicæ*.

* Boustoffen voor eene Fauna van Nederland, ii., iii.

4. GERMAN.

A paper by the late Professor van der Hoeven, written in 1866, and published the following year, only reached us within the last twelve months*. It contains a description and figure of the skeleton of *Dromas ardeola*, a form respecting the true affinities of which widely differing opinions have at various times obtained among systematists; and a good abstract of these opinions is prefixed by the author to his essay. From the osteology it is made plain that the place of the bird is next to the genus *Hæmatopus*; and we cannot help adverting to the fact that, on the same grounds, Mr. Edward Newton, some years ago (*Ibis*, 1867. p. 351), regarded it as a Plover—an idea which seems to have originated with Temminck (*Rec. Nouv. de Pl. Col. livr. 65*), and was afterwards adopted by Van der Hoeven, who in this his last publication has proved its truth. It should be remarked that Mr. Blyth, in urging as he did the separation of *Dromas* from either the Herons or the Storks (to which it had been formerly considered allied) and its affinity to the Terns (an assignment we cannot commend), did not so much wish to place it among the “Natatorial” birds as desire to show that the Terns and Gulls should not be severed from certain groups usually classed as “Grallatorial”—a view which, in our opinion, is unquestionably correct.

Two small treatises deserve some notice here on account of the pains bestowed upon them by their respective authors. One is by Herr Friedrich Cramer, on the Significance and Development of the Egg in Birds, which is published in the ‘*Verhandlungen*’ of the Würzburg Physico-Medical Society (New series, vol. i.); but, like the majority of such papers, it throws little light on matters of classification. The other, published in the well-known ‘*Archiv*’ of Professors Reichert and Du Bois-Reymond, for 1868, is by Dr. Hugo Magnus of Breslau, and gives an account of his Physiologico-Anatomical Inquiries into

* *Annotationes de Dromade ardeola*, Payk. Scripsit J. VAN DER HOEVEN. Dresdæ: 1867. 4to, pp. 16, and plate. (Separately printed from *Nov. Act. Acad. L.-C. Nat.-Cur.* vol. xxxiii. French translation in *Arch. Néerland.* 1868, pp. 281–295.)

the Breast-bone of Birds. This contains materials that may be made something of by systematists; but the author's researches so far do not seem to have led him to any very practical results. He considers that five distinct forms of sternum are found in the class, which is, if an obvious, certainly an arbitrary way of grouping their possessors, since it brings into the same category the *Gallinæ* and *Passeres*. We trust, however, that the author may continue his inquiries, and in particular not lay such great stress on the shape of the posterior extremity of the bone, which is often, even in members of the same natural family, so much modified as to show that it cannot be regarded as offering sure ground for classification (*cf.* Phil. Trans. 1869, p. 337, note); but on this subject we hope before long to have something more to say for ourselves.

In the last volume of 'The Ibis' (p. 113) we gave an account of Herr von Pelzeln's very important work*, and of the circumstances under which it was undertaken. The third part, which is now before us, continues and completes the catalogue of the birds collected by Natterer, and the description of the new species. Commencing with the *Conirotres*, it passes on to the *Scansores*, and concludes with the *Columbæ*, *Gallinæ*, *Grallæ*, and *Anseres*. Nineteen species of these groups are described as new, among which are two Tanagers (*Euphonia ochrascens* and *Tachyphonus nattereri*), four species of *Picumnus*, and two of *Crax*. After the conclusion of the general list, the author gives us a most interesting essay upon the ornithic fauna of Brazil, as exhibited by Natterer's discoveries. He begins by dividing South America ornithologically into four subregions, which are further shown in a map attached. These are:—

1. The *Columbian Subregion*, embracing Trinidad, Northern Venezuela, New Granada, and the western portions of Peru, Ecuador, and Bolivia.

2. The *Amazonian Subregion*, containing Guiana and the whole area drained by the Amazons and its affluents.

* Zur Ornithologie Brasiliens. Resultate von Johann Natterer's Reisen in den Jahren, 1817 bis 1835. Dargestellt von AUGUST VON PELZELN, III. Abtheilung. Wien: 1870.

3. The *South-Brazilian Subregion*, containing that part of Brazil lying south of the Amazons-valley and the adjoining countries on the left bank of the Paraguay, down to Uruguay and Monte Video.

4. The *Chileno-Patagonian Subregion*, containing Chili, La Plata, and Patagonia.

These views we believe to be very nearly correct; for, with some slight modifications, no more natural divisions could, we think, be made for that part of the neotropical region which lies south of the Isthmus of Panama. After this dissertation, Herr von Pelzeln points out at some length the most remarkable peculiarities of the portion of South America explored by Natterer, which extended into two only of the above-named Subregions, the Amazonian and the South-Brazilian. Both of these districts are rich in numerous and varied forms of the peculiar Neotropical families, *Formicariidæ*, *Tyrannidæ*, *Cotingidæ*, *Ramphastidæ*, *Cracidæ*, and *Tinamidæ*. The South-Brazilian Subfauna is especially characterized by the abundance of *Furnariinæ*, *Synallaxinæ*, *Troglodytinæ*, *Fluvicolinæ*, *Spermophilinæ*, *Cyanospizinae*, and *Columbidæ*, while the Amazonian district, which is principally forest, shows greater richness in *Bucconinæ*, *Galbulinæ*, *Cærebinæ*, *Dendrocolaptinæ*, *Cotinginæ*, and other wood-loving groups. In order to show more clearly the differences between these two faunas, full lists are given of the species observed by Natterer in each of them, in parallel columns. In a third column is added a corresponding list of the species observed in that part of Brazil denominated by the author the Bolivio-Brazilian district (*cf.* Ibis, 1869, p. 115), which occupies an intermediate position between the two faunas. Herr von Pelzeln then reverts to the six principal subdivisions into which, as already explained in our former notice, he has divided the ground traversed by Natterer, and points out at full length their diversities and similarities. There were only five species of birds of which examples were collected by Natterer in each of these six subdivisions, while as many as twenty species were obtained in five out of the six. Complete lists are added of the species obtained by him in each of these districts; and the various faunas are carefully compared with one another. In the South-

Brazilian district, he collected 525 species, in the Central-Brazilian 312, in the Bolivio-Brazilian 456, in the Columbio-Brazilian 540, in the Guiano-Brazilian 182, and in the Lower-Amazonian 197. This valuable essay concludes the third part of the work, which will be completed by a fourth, now in the press, containing (we are glad to hear) a general index to the whole.

5. RUSSIAN.

Few, if any, of our readers ought to be unacquainted with the excellent work done now many years ago by Dr. von Middendorff during his arduous travels in the extreme north and far east of Siberia, though it is to be feared that their knowledge of the 'Sibirische Reise' may not be very deep. The strictly ornithological part of this voluminous work was issued in 1853, and of course it is not our intention here to revert to its contents; but in 1867 there appeared another volume, or portion of a volume, of the series, giving a general Review of the Natural History (in the widest sense of the term) of the inhospitable tracts visited by this intrepid traveller, and especially of the Animal World of Siberia*. This book reached us only in the course of the last twelvemonth, and we feel bound to mention it as including matters of very great interest. Since the author risked his life on those boundless wastes, several other devoted explorers have added much to our knowledge of their *ornis*, of which he is consequently enabled to give a far more complete account than if he had attempted the task in former years, dependent only on the labours of his predecessors and on his own personal investigations, though these were neither few nor unimportant.

The geographical range of the birds, among other Siberian animals, is treated at some length. Dr. von Middendorff divides and subdivides them (somewhat arbitrarily perhaps) into various groups, such as the "Circumpolar Fauna," composed of those species which he considers to be quite or nearly identical throughout the whole circumpolar tract, including as a sub-

* Dr. A. V. MIDDENDORFF'S *Sibirische Reise*, Band iv. Uebersicht der Natur Nord- und Ost-Sibiriens, Theil 2, erste Lieferung.—Die Thierwelt Sibiriens. St. Petersburg: 1867. 4to, pp. 785–1094.

division the "Hyperboreal Fauna," consisting of the species which penetrate furthest north; and outside this comes his "Siberian Circumboreal Fauna," in which the animals of the Barrens (*Tundras*) are separated from those of the Forests. As the work is not likely to be of very easy access to most of our readers, we here subjoin the author's lists of the species belonging to these divisions.

"HYPERBOREAL BIRDS" (pp. 965-967).

Charadrius pluvialis.	Calidris arenaria.	Mergulus alle.
— hiaticula.	Cygnus musicus.	Procellaria glacialis.
— squatarola.	Anser bernicla.	Lestris parasitica.
Streptilas interpres.	— hyperboreus.	— richardsoni.
Phalaropus rufescens.	Anas spectabilis.	Larus sabinii.
— cinereus.	— mollissima.	— eburneus.
Tringa canutus.	— glacialis.	— tridactylus.
— maritima.	Uria grylle.	— leucopterus.
— cinclus.	— bruennichi.	— glaucus.
Lagopus alpinus.	Falco islandicus.	Corvus corax.
Plectrophanes nivalis.	Strix nyctea.	

"CIRCUMBOREAL BIRDS"—Barrens (p. 988).

Charadrius morinellus.	Anas stelleri.	Phalacrocorax carbo.
Tringa subarquata.	Colymbus glacialis.	Lestris pomarina.
Cygnus bewicki.	— arcticus.	Larus argentatus.
Anser albifrons.	— septentrionalis.	Sterna arctica.
— temmincki.	Uria troile.	
— leucopsis.	Alca torda.	
Lagopus albus.	Alauda alpestris.	Aquila albicilla.
Plectrophanes lap- ponica.	Hirundo riparia.	

—Forests (pp. 1007-1009).

Anas fusca.	Anas strepera.	Mergus merganser.
— histrionica.	— penelope.	— serrator.
— boschas.	— crecca.	— albellus.
— acuta.	— clypeata.	Podiceps cornutus.
Lagopus albus.	Bombycilla garrula.	Strix cinerea.
Fringilla linaria.	Pica caudata.	— brachyotus.
Loxia leucoptera.	Hirundo rustica.	— funerea.
— curvirostra.	Falco peregrinus.	
Corythus enucleator.	Buteo lagopus.	

It will be readily seen that the information given by our author bears materially on the question (which has been more than once mooted) of the advisability of recognizing a circum-

polar "Province"* or "Region" among the principal zoogeographical divisions of the earth's surface; nevertheless no naturalist who has not some special knowledge of ornithology will be able to avail himself of it in generalizations without great risk of error; for Dr. von Middendorff takes (as do most of the Russian zoologists) very decidedly what are called "lumping" views of species, and many of our friends, without any tendency to exaggerated "splitting," will demur to *Hirundo horreorum* being regarded as identical with *H. rustica*, and *Pica hudsonica* with *P. caudata*, and so forth. The comparison, which follows (pp. 1015-1017), of Alpine species with those of the High North is in the same strain; but here there is less danger of going astray.

Referring (p. 802) to the dwarfish examples of some birds on which distinct species have been founded, as for instance *Tringa schinzi*, Dr. von Middendorff asserts what we have heard announced before as probable†, namely, that of almost every high-northern species he finds a larger and a smaller race, the existence of which latter he explains by the fact that the young of late broods seldom attain the full size of their parents, their growth being arrested by the severe weather of early autumn, and the increasing scarcity of food at that season. He further declares, and the statement is of some value, that individuals of the smaller race usually interbreed with each other, and seldom with the larger birds.

An interesting chapter is that on the progressive extension westward of the range of many eastern species (pp. 1052-1056), a fact we believe first noticed by Prof. Lilljeborg (Naumannia, 1852, ii. pp. 87-93), and among them *Carpodacus erythrinus* (cf. Ibis, 1869, p. 226); but it is especially worthy of note that the list of these invading species contains so many of those which have of late been recorded as occurring in Western Europe, or even the British Islands, such as *Turdus sibiricus*, *Emberiza pusilla*, *E. pityornis*, *E. rustica*, *Phylloscopus superciliosus* and *Lanius phaniceus*, to say nothing of those which have long been known as occasional visitors to our shores, as *Turdus*

* Cf. Huxley, P. Z. S. 1868, p. 315.

† Cf. Altum, J. f. O. 1866, pp. 107-111.

varius, *Loxia leucoptera*, *Nucifraga caryocatactes*, *Falco vespertinus*, *Anas rutila*, and *Sterna caspia*.

In another chapter (pp. 829–909) great stress is laid on human agency in causing alterations in the fauna of a newly-settled country, both indirectly, from the birds following in the track of the agriculturist, who gradually forces out the hunter—and of this the spreading of *Passer domesticus* (pp. 896, 897) is a good example,—and directly, as has been the case of *Gypsetus barbatus* (p. 851), now quite extirpated in the Transbaikalian mountains, where a few years ago it was not uncommon.

We have thought it worth while to devote more than ordinary space to this important work, almost every page of which shows the varied literary attainments of the author, though it is very much to be regretted that many of the newer publications, which would have thrown much light on the different subjects treated, have been altogether overlooked, or, if mentioned at all, only quoted apparently at second-hand. Our strong wish, as we lay down the book, is, Would that a publisher could be found to give us an English translation!

6. AMERICAN.

We must congratulate Mr. Elliot on the completion of his great illustrated work * in continuation of that of Audubon, and now fitly dedicated to the memory of Alexander Wilson. Since we last noticed it (*Ibis*, 1868, pp. 345, 346) six Parts (two of them being conjoined) have appeared. The species figured are as follows:—

Part X. (1868):—*Meleagris mexicana*, *Chrysomitris lawrencii*, *Harporhynchus cinereus*, *Leucosticte griseonucha*, *Æstrelata* (lege *Æstrelata*) *hæsitata*, and *Priofinus cinereus*.

Part XI. :—*Falco aurantius*, *Helminthophaga luciae*, *Ægiothus fuscescens*, *Heliopædica xantusi*, *Rissa kotzebuii*, and *R. nivea*.

Part XII. :—*Falco candicans*, *Passer domesticus*, *Micrathene whitneyi*, *Atthis heloisæ*, *Larus brachyrhynchus*, and *L. hutchinsi*.

Part XIII. (1869):—*Falco islandicus*, *Stellula calliope*, *Scops kennicotti*, *Haliplana discolor*, and *Scops flammeola*.

* The New, and Heretofore Unfigured Species of the Birds of North America. By DANIEL GIRAUD ELLIOT. New York: 1869. 2 vols. fol.

Parts XIV., XV.:—*Graculus cinnatus*, *G. perspicillatus*, *Chen caerulescens*, *Somateria v-nigrum*, *Sagmatorhina lathamii*, *Stercorarius catarrhactes*, and *Fratercula glacialis*.

Many of these plates are from Mr. Wolf's pencil, and some are very beautiful, in particular that of the Mexican Turkey, and those of the Cormorants. The occasional introduction of woodcuts with details of the head, wings, and feet forms a new and useful feature of the work. In his "Introduction" Mr. Elliot says some hard, but by no means undeserved, things of species-makers: the origin of some so-called species he attributes, and possibly with reason, to hybridization; but more, we think, are due to a process which, to coin a barbarous word, might perhaps be called *hyperbrehmization*!

The first volume of the newly-commenced 'Memoirs of the Boston Society of Natural History' (pp. 542-563) contains a valuable paper* by Prof. F. Sumichrast, who has long resided in the State of Vera Cruz, and paid great attention to its ornithology. His object is to show the vertical range of the native birds; while a list of the migratory species is also added, stating the altitudes reached by them during their winter sojourn in the country. A naturalist resident in a district like this is of course able to treat of the distribution of the species within its borders in a way that no traveller can possibly do; and the author has been at great pains to elucidate his subject, not only giving the general range of each species, but also mentioning instances where individuals have been found beyond its normal limits. He divides the country into three vertical zones:—

1. The Hot Region (*tierra caliente*), reaching from the sea-level to a height of about 600 mètres (2000 feet);

2. The Temperate Region (*tierra templada*), embracing the zone from 600 to 1500 mètres (2000 to 5000 feet); and,

3. The Alpine Region (*tierra fria*, he says, is too vague an appellation), extending from 1500 to 3500 mètres (5000 to 11,500 feet). The number of species especially mentioned (though reference is made to many others) is 175, all belonging

* An abstract is also printed in the 'Proceedings' of the same Society (xii. pp. 222-225).

to the *Passeres*—a fact which rather diminishes the value of the author's conclusions, important and interesting as his paper undoubtedly is. His divisions, too, seem somewhat arbitrary, and require more definition than he gives of their vegetable and other animal products, since these naturally have a very potent influence on the distribution of the birds.

Mr. O. Salvin has been kind enough to inform us that, in Guatemala, the zones which seem to him to form the most natural divisions in point of altitude are:—1. The Hot Region, extending from the sea to a height of about 4000 feet, wherein the characteristic vegetation is a mixed forest, the prominent trees being the Cieba, Mahogany, India-rubber, and (most conspicuous among Palms) the Coroso; Plantains also thrive best here: 2. A Temperate Region, from 4000 to 7000 or 8000 feet, forming the zone of Evergreen Oaks, which on the volcanoes attain a great size, and are mingled with forests of *Chiostemon*: 3. The real Alpine Region, lying above 8000 or 9000 feet, with upland Pines, *Vaccinieæ*, Lupins, and other true alpine plants. Considerable modifications of these figures are necessary for various parts of the country, the nature of the forests varying much, according to the amount of moisture deposited; but Mr. Salvin believes that these divisions best group together the species which have their *foci* in one or other of them.

Not much need be said of the author's notes on the species, except to remark that the general rule of the higher the latitude the lower the range of distribution seems to hold good here, the altitudes attained by birds in Vera Cruz being less than those at which the same species are found in Guatemala. Thus, in the former, *Turdus grayi* is believed not to reach a height of 1300 mètres (4000 feet), whereas in the latter it is very common 1000 feet higher. Again, *Icterus wagleri* in Guatemala is also common at 5000 feet, while in Vera Cruz it is assigned to the Hot Region—that is, not exceeding 2000 feet. But we may feel assured that it is not to altitude and latitude, or, in other words, to temperature alone, but also to the supply of food, that we must look in a great measure for the causes of the vertical range of species of birds. On the other hand, their horizontal distribution seems to be traceable to changes in the

contour of the land in times long past. But upon this subject we need not enter here; it is sufficient to say that we trust the author will continue his observations, and finally give us the results based upon all the species of birds found in the State. We ought also to add that this paper concludes with an interesting note on the provident habits of *Melanerpes formicivorus*, a subject to which we have before adverted (*Ibis*, 1868, pp. 116, 117); and an illustration of a store of acorns, supposed to have been laid up by this species, is given.

Though our last number contained an article of some length devoted to one of Mr. Lawrence's recent labours, we have no fewer than four more papers from his indefatigable pen to notice. The first of these, from the 'Proceedings' of the Philadelphia Academy, contains descriptions of seven new species of American birds from various localities, namely:—*Dendræca capitalis*, from Barbadoes,—the differentiation of which is an additional bit of evidence in favour of Prof. Baird's suspicion that each of the West-Indian islands "possessed a Golden Warbler peculiar to itself" (Rev. Am. B. p. 201); *Quiscalus fortirostris*, from the same island; *Tachyphonus atricapillus*, from Trinidad; *Thamnophilus virgatus*, from New Granada; *Rhynchocyclus marginatus*, from Panama; *Pipra* (?) *cinnamomea**, from the Upper Amazon; and *Harpagus fasciatus*, from Guatemala. In a note appended to this paper the author remarks on a statement made in 'The Ibis' for 1868 (p. 115, *not* 299, as printed) by Mr. Salvin's authority, that *Zonotrichia melanotus* was "possibly the same as *Hæmophila humeralis*, Cabanis," and dissents therefrom, as well he may; for Mr. Salvin has subsequently stated (*anteà*, p. 114) he by mistake wrote that name for *H. ruficauda*. Mr. Lawrence's remaining papers are from the 'Annals' of the New-York Lyceum, and consist of:—a "List of a Collection of Birds from Northern Yucatan," wherein are described two new species, *Contopus schotti* and *Zenaidura yucatanensis*, both obtained at Merida by Dr. A. Schott; then a "Cata-

* Apparently identical with the subsequently described *Neopipo rubicunda* of Messrs. Sclater and Salvin (P. Z. S. 1869, pp. 438, 439, pl. xxx. fig. 3), as these gentlemen remark.

logue of Birds from Puna Island" in the Gulf of Guayaquil, where, out of twenty-one species found, four are new, namely *Turdus reevii*, *Thryothorus superciliaris*, *Empidonax griseipectus* and *Contopus punensis*; and, lastly, "Characters of some New South-American Birds, with notes on other rare or little-known species." The new birds are named *Turdus hauxwelli*, *Ochthæca rufomarginatus*, *Mecocerculus uropygialis*, *Pogonotriccus plumbeiceps*, *Myiozetetes rufipennis*, *M. inornatus*, *Lesbia ortonii*, and *Accipiter nigroplumbeus*.

When, some months ago, Prof. Baird wrote (*Ibis*, 1869, p. 350) of "Mr. Robert Ridgway, a young ornithologist of much promise," he certainly did not overshoot the mark; for this gentleman has not been long in giving proof of his competency. To some "Notices of certain obscurely known species of American Birds," published in the Philadelphia 'Proceedings' for June last he prefixes some remarks we would gladly reproduce here, did space permit; for they display a most philosophical train of thought on the part of the writer; and we sincerely congratulate our ornithological brethren in America on the addition to their ranks of one who, in the field as in the study, cannot fail to attain a very high position. The remarks which call for this expression of opinion are on the hybrids* occurring between representative species in the tracts where their ranges overlap. Of this fact no less than *fourteen* instances between as many pairs of North-American species are named by Mr. Ridgway, who says that many others are known to him; and his general considerations on them are extremely interesting. The rest of the paper is of more special scope. The author treats first of the North-American Wood-Thrushes (the group *Hylocichla* of Prof. Baird), to which belong eight species; and next of the uniformly red species of *Pyranga*, of which he enumerates six forms—one, *P. cooperi*, being distinguished for the first time; lastly

* It must not be supposed, however, that we coincide in Mr. Ridgway's views. There seems rather a probability that some of these so-called "hybrids" exhibit the ancient and more generalized form of parent species, the members of which at the extreme limits of its range have become more widely differentiated.

comes a notice of the smaller *Quiscalis* of the United States, three in number—one, *Q. æneus*, being described as new. The whole paper shows a very great amount of care in its execution.

XX.—*Letters, Announcements, &c.*

THE following letters, addressed "To the Editor of 'The Ibis,'" have been received:—

South African Museum, Cape Town.
October 9th, 1869.

SIR,—Permit me, in your pages, to thank Dr. Malmgren for his letter (*Ibis*, 1869, pp. 229, 230), which has only just reached me, and to point out that, of the birds to which he has called the attention of your readers as occurring in *South Africa*, and omitted from my book, *Budytes flavus* was hinted at (*B. S. Afr.* p. 119) and has since been noted by me (*Ibis*, 1869, p. 73) as found near Cape Town; for, as I then stated, the specimen obtained seems to be identical with examples of the European species. As to *Caprimulgus europæus*, I had heard of it, but could not satisfy myself as to the truth of the report; now, however, I can include it in any subsequent edition, as occurring at Natal, on the authority mentioned by your learned correspondent. But for the rest I must demur to receiving them as "South-African"—that is to say, as found within my narrowed limit, until the latitude and longitude of the places where they have occurred are particularized—the first mentioned by Dr. Malmgren being clearly beyond my range. Wahlberg unfortunately invented names and limits for the countries he visited, which are very different from those which we dwellers in South Africa recognize. His "Caffreland" is not our Caffreland, and extends I know not whither—as far as, if not far beyond Lake N'gami! A specimen therefrom, labelled by him from "Caffreland," may really come from a place many degrees beyond my limit, and I cannot include such an one in my list. It was a great pity that Wahlberg should have adopted this plan of giving old names to new boundaries; for it is calculated to make "confusion worse confounded."

Yours, &c.,

E. L. LAYARD.

Agra, Oct. 24, 1869.

SIR,—On a former occasion (Ibis, 1868, pp. 233–235) I pointed out the probable identity of *Saxicola capistrata*, Gould, and *S. picata*; I have now to inform you that the matter admits of no possible doubt. My museum contains, besides numerous typical examples of both forms, more than fifty specimens in the transition state, entirely connecting by almost imperceptibly small links the apparently wide gulf that lies between the opposite ends of the chain. As for the white extending further up the back in one form than in the other, the examination of the large series of specimens at once dispels it. The amount of white varies a good deal in individuals, but is not, *as a rule*, greater in extent in the one type than in the other. *S. capistrata* may without the slightest hesitation be remitted to the long list of synonyms which already unfortunately encumber this genus.

This is not, however, the only new *Saxicola* of Mr. Gould's that must disappear before the inexorable logic of facts. *S. montana* is nothing but the breeding-plumage of *S. atrogularis*. Be it distinctly understood that I offer no opinion as to the distinctness or identity of *S. deserti*, and *S. atrogularis*; but I do positively assert, with a complete series before me, that *S. atrogularis* and *S. montana* are different stages of plumage of one and the same species. One of the most remarkable features about the change of plumage in this species is, the gradual change of the axillaries and lesser wing-coverts, in some individuals, from a silky greyish-white to a deep jet-black; and it is not improbable that it is this which misled Mr. Gould into attributing specific value to these two differences. I have suspected this fact for some time, but have only this day had an opportunity of carefully comparing the large series of *S. atrogularis* that my museum contains, killed at all periods between the 1st of October and the 1st of May.

When we first see the bird in the Upper Punjab in October, it exactly corresponds to Mr. Gould's figure of *S. montana* (B. As. pt. xvii.), except that the rump in no specimen that I have seen is quite so pure a white as he figures it. It has always, even when the bird first visits us, a faint fulvous tinge; similarly the breast and lower parts are never quite so pale as

his lower right-hand figure would lead us to suppose. Probably in the breeding-season, amid the alpine tracts of the Himalayals, the plumage may in these respects be exactly as figured by Mr. Gould from Thibet examples. Later in the season the whole upper and under surface and rump grow dingier and more rufous; the black of the throat and sides of the head becomes dull, by the points of the feathers everywhere turning greyish-white. The white which at all times narrowly tips the greater under wing-coverts creeps, more or less, up the feathers; and greyish-white points appear on the tips of the lesser lower wing-coverts. The quills and upper wing-coverts are first narrowly and then more broadly edged with rufous-fawn. In some specimens killed in December and January, males as well as females, and these are possibly yearling birds, there is scarcely a trace of black visible on the chin and throat until the feathers are raised, and the black bases are clearly seen. In these same birds the wing-lining becomes almost entirely greyish-white; but even here, pushing aside the feathers, it will be seen that the basal portions are dusky, if not black. Some specimens do not undergo so great a change as others; and some may be shot at all times in the cold weather only slightly more rufous than the *montana*-form, and with but little, comparatively speaking, of the white tipping to the feathers of the throat and sides of the head. On the other hand, the typical mid-winter plumage is that represented in Mr. Gould's figure of *S. atrogularis* (B. As. pt. xvii.), with this one exception, that I have never yet seen a bird in the rufous-brown winter-plumage the black of whose chin and throat was quite so pure as Mr. Gould's plate represents. Of the innumerable specimens in this phase of plumage that I have seen, all had the feathers of these parts more or less tipped with fulvous-white.

This bird is very common in the upper portion of the Northwest Provinces, and throughout the Punjab. Fifty specimens may be seen in a single morning, each, so long as the cold weather lasts, perched solitary on the top of some stunted bush, every now and then fluttering the tail like a Redstart, flying off and seizing some insect in the air like a Fly-catcher (returning usually to the same perch), or darting down and devouring on

the ground some ant or beetle. In its various movements and habits it reminds one alternately of the Thrushes, the Redstarts, and the Fly-catchers.

S. montana may, like *S. capistrata*, be consigned to the synonymic limbo. Of course, with such very different-looking specimens before him, Mr. Gould was quite right to characterize them separately; but with a complete series of transitional forms before me, no doubt as to the identity of these at first sight clearly distinct types can exist.

We have in India two large species of Pipit, which have been hitherto, as I think, erroneously identified with two Abyssinian species. The one of these, well-figured by Dr. Jerdon in his 'Illustrations of Indian Ornithology' as *Anthus similis*, Jerd., has been subsequently identified by Mr. Blyth as *A. cinnamomeus*, Rüppell; this is essentially the form of Southern India, and, so far as I yet know, does not occur north of the Nerbudda. All the large Pipits of this type sent me from localities north of the Nerbudda, as well as all those procured in the Himalayahs where we have found them breeding, are referable to the second species, identified by Mr. Blyth with *A. sordidus*, Rüppell*.

With all deference to Mr. Blyth's superior knowledge, I submit that he is in error in both these identifications, or else that Rüppell failed to describe correctly, either in Latin or in his own German, the birds he had before him. First as to *A. cinnamomeus*, it will be seen from his descriptions in both languages (Neue Wirbelth. p. 103) that he distinctly sets forth as a leading feature that the upper surface is cinnamon-brown, whereas in *A. similis* (I have specimens from the Neilgherries, as well as Dr. Jerdon's figure, before me) there is not a trace of cinnamon in the brown of the upper surface. Next Rüppell insists on the point that both the exterior tail-feathers on each side are yellowish-white, the innermost of the two only having a portion of the inner web dusky-brown; but in *A. similis* even the external feather of all has a considerable portion of the inner web dusky-brown, the rest being reddish-white, and only a portion of the tip of the second exterior reddish-white. Thus in Rüppell's *A. cinnamomeus* the whole of the

* [Cf. Ibis, 1869, p. 437.—ED.]

outermost lateral feather is yellowish-white, while in *A. similis* only a part is reddish-white, a considerable portion of the inner web being dusky brown. Again in *A. cinnamomeus* the whole of the second exterior feather is yellowish-white, except a portion of the inner web, which is dusky brown, whereas in *A. similis* the whole is dusky brown, except a small patch of reddish-white at the tip. It is not, moreover, as if Rüppell had been careless, because, while describing the tail of *A. cinnamomeus* as above, he has described that of *A. sordidus* much as that of *A. similis* really is, showing that he noted carefully minor differences of this nature.

While, therefore, the Southern-Indian Pipit, *A. similis*, cannot be identified with *A. cinnamomeus*, still less can we identify it with *A. sordidus*; this latter, however, does in many respects appear to correspond closely enough with the bird of Northern India; but there is one essential difference which prevents its identification with this species also. Both our Indian species have well-marked *striæ* on the lower portion of the throat and breast; these *striæ* are described by Rüppell in both descriptions of *A. cinnamomeus*, while they are ignored in both descriptions of *A. sordidus*. Nay, more, could we suppose such a double oversight in the text, the figure of *A. sordidus* would settle the question; for this too shows that there are no such *striæ* in that species.

It follows, I think, that our Indian Pipits cannot properly be identified with either of the Abyssinian ones. They cannot be identified with *A. cinnamomeus* on account of the difference in the colour of the upper surface and tail, and they cannot be identified with *A. sordidus* from the entire absence of dark *striæ* and spots (well-marked in both our species) on the breast.

Our Southern bird therefore will stand as *Corydalla similis* (Jerd.), our Northern one as

CORYDALLA GRISEORUFESCENS, nobis, sp. n.,
the grey-brown upper, and reddish under surfaces being its leading characteristics.

The Indian *Pipastæ* fairly puzzle me. I have a very large series, including specimens from almost every part of India. My friend Mr. Brooks has also some fifty or sixty specimens,

collected chiefly in the Etawah and Cawnpore districts of the North-West Provinces. All our birds appear to belong to one and the same species; no constant difference, however minute, was discoverable: toes and tarsi were more or less elongated and slender, and slight differences were observable in the size and shape of both bills and claws. In colour and in the amount of striation of the upper and spotting of the lower surfaces the most marked differences existed, and there was no single example not connected with others by intermediate forms. There were birds manifestly identical with those described as *Pipastes maculatus* (Hodgs.), with those described as *P. agilis* (Sykes), and, again, those usually referred to *P. arboreus*; but that one and all of these forms were referable to one and the same species appeared to me indisputable. Differences of age, sex, and season will probably be found, when time is made to work out the question, thoroughly to account for the marked individual variations noticeable in this species.

Further, I took nine specimens of *P. arboreus* from England and France, and compared them with our Indian birds. There was no single one of them to which an exact duplicate could not be selected from amongst my Indian series. There were several types of the Indian bird unrepresented amongst the European specimens, but not one of the latter without its *Doppelgänger* (if I may use the term) among the former.

That all our Indian Pipits of the *Pipastes* group, known as *P. agilis*, *P. maculatus*, and *P. arboreus*, ought to be united as one species under the latter, or possibly some older, name, I can now scarcely doubt.

This, however, is not the only difficulty: scarcely any bird can seem more distinct than *Anthus rosaceus* as we get it in its fine summer plumage in the Himalayahs, with its dark green upper surface, rich vinous-coloured throat and upper breast, and bright primrose-yellow axillaries and wing-lining; but this bird in winter plumage is widely different, and I confess that the idea has continually occurred to me, since I have been examining very large series of specimens, that this bird must interbreed with *P. arboreus*. As for differences in shape of bill, and length and strength of tarsus, toes, and claws, these are by no means con-

stant. I have specimens of *A. rosaceus* with legs, toes, and claws as short and stout as any *P. arboreus*, and *P. arboreus* with these same parts as long and slender as any *A. rosaceus*. Again, I have the dark green *A. rosaceus* with the vinous breast and with greyish-white axillaries and wing-lining, and a brown *P. arboreus* with the edge of the wing and lining pale primrose-yellow. Typical examples of both species seem unmistakably distinct; but intermediate forms of the most puzzling character occur of such a nature that it really seems to me impossible to decide to which species they ought to be referred.

I have not, of course, been able to come to any final conclusion on this subject; but I am particularly anxious to know whether this excessive amount of variability which seems to characterize many of our Indian so-called species is equally noticeable in European birds. For instance, are intermediate forms between *P. arboreus* and *A. pratensis* ever met with? or, again, between either of these and *A. obscurus*? Good typical specimens, such as have been sent to me from England, are of course distinct enough. What I wish to learn is whether, with a large series of each from different parts of Europe, intermediate or transitional forms are observable.

Yours truly,

ALLAN O. HUME.

Etawah, December 11, 1869.

SIR,—In my letter to you (Ibis, 1869, pp. 234–237) I find that some corrections are necessary.

The birds I mistook for *Saxicola ænanthe* are certainly *S. saltatrix*, which is the larger bird and of a purer and lighter brownish-grey above; but the great distinction is the colour of the under wing-coverts, which are unspotted white in *S. saltatrix*, and black and white in *S. ænanthe*.

The small bird resembling *Phyllopneuste rama* is a new and good species*. I understand Mr. Hume has given you full particulars of it, for which he had ample materials; for the entire table was covered with specimens of both sorts. I have recently sent Mr. Tristram fresh specimens of each, not skinned, but

* [*Jerdonia agricolensis*, vide *suprà*, pp. 180–185.—ED.]

preserved with carbolic acid. In these unskinned birds the difference is most apparent.

Phylloscopus brevirostris is a good species, and I was mistaken in thinking it was identical with *P. rufus**. The wings of the latter are much shorter, and the bird is generally much greener than the former; otherwise, they are wonderfully similar in colour, and still more so in song. I often obtain specimens of *P. brevirostris* with little or no yellow under the wings; but as a rule the under wing-coverts are as yellow as those of the Chiffchaff.

My remarks about *Reguloides proregulus* in the same letter apply to *R. viridipennis*. I have since had two specimens of the former from the Himalayas, and I find them to be quite distinct from the bird I get commonly here, which is *R. viridipennis*. Dr. Jerdon's descriptions of the two birds are correct; but the last-named generally has the rump lighter in colour than the rest of the back, sometimes almost yellow; but the light olive of the back is shaded gradually into the lighter rump, not abruptly defined as it is in *R. proregulus*, where the yellow is bright and pure, and the line of demarcation between the olive and that colour is level across the bird's back, the contrast, as I remarked in a former letter, being as strong and decided as the white rump of a Martin or Wheatear. Sometimes the rump of *R. viridipennis* is concolorous with the back, but most of my specimens have that part rather lighter.

Capt. C. R. Cock, of Dhurmsala in the Himalayas, tells me that *Reguloides superciliosus* is very common there at all seasons. He sent me a specimen to prove that he had not mistaken the species. The last time I heard from him he said the bird was still there, though in diminished numbers. I think there is every prospect of getting the eggs of this rare British bird next spring, now that we know one of its summer resorts. I only procured a single bird when I was in Kumaon in the spring of 1868. This species varies much in colour; Mr. Hancock's Hartley specimen (*Ibis*, 1867, p. 252) is, I understand, an unusually brilliant one. He sent me a drawing of it; and I have only one specimen which at all approaches it in vividness of colour. The

* [*Cf. supra*, p. 168.—ED.]

bright birds must be, I think, the young in their first plumage. Towards the spring they have very little of the green and yellow left, as they fade so much owing to sun and weather. A spring-moult to a duller and browner plumage also takes place: whether every bird moults in spring, or only the young ones, I cannot tell; but I have specimens of many small birds as well as of this species undergoing a spring-moult. I have sent Mr. Hancock a specimen of *Phylloscopus viridanus* in which the quill-feathers are being changed. This bird I shot in the spring of the year, and I was struck with the circumstance at the time. As a specimen it was not worth keeping; but it proved that small birds do sometimes moult even quill-feathers in the spring.

In a former letter (*Ibis* 1868, p. 351) I noticed a pale buff Eagle which Mr. Hume and myself thought was the young of *Aquila navia*. I have sent two of these birds to Mr. Tristram, one in the pure buff plumage, and the other in a rich reddish-brown one. That these two are specifically identical is shown by the under surface of the wing, which corresponds in each, as also does the colouring of the primaries; but the wing of the red bird does not agree with that of any other Eagle, so far as I remember. I have lately shot another buff bird, a fine female, which had killed and partly eaten an Egret. In this specimen the cere and feet were deep wax-yellow. I am now sure that this pure buff-and-grey plumage is a perfect one, that of an adult bird, and that this Eagle is quite distinct from *A. navia**.—It is as rare as that is common. I only get one or two in a season; and I could procure a hundred Spotted Eagles, I think, if I wished. The dimensions of the buff Eagle are exactly those of *A. navia*; it is quite as robust, and the sternum of one I examined agrees in form with those of four of that species.

Mr. Blyth remarks (*Ibis*, 1866, p. 233) that the Indian *Neophron* is not *N. percnopterus*, but another species—*N. ginginianus*. The distinction of the dark bill does exist, but only in certain localities in India. When at Delhi the other day I ob-

* [Mr. Tristram informs us that the specimens sent to him by Mr. Brooks certainly belong to *A. navioides*—a species not before recognized as Indian.—ED.]

served that some of these birds had dark bills, others not so dark, and some had light ones. The difference may be due to some peculiarity of climate; that it is specific I do not believe. I shot one bird at Delhi, which has a dark bill and claws, the cere of a deeper colour than the rest of the bare skin, and a few small white feathers on the throat; but had I chosen I could also have procured close to this bird one with a light bill, and a complete representative of our more southern bird; in size, proportion of the wings to tail, and other points these birds vary a little, and in colour of the bill they vary much. I could not procure a black-billed one here at Etawah, nor could I at Almorah, which is much further north than Delhi; but at Delhi the black bills are the rule. The one I shot has a dark bill; but I saw many others with the point of the bill nearly or quite black.

Between this and Delhi there must be a part of the country where light and dark bills will be equally common; and north and west of Delhi there will be a place where the weakly birds with pale bills will never be found. I have no doubt that dark- and light-billed birds will sometimes be found breeding together; a dark-billed male and light-billed female, or *vice versâ*. Mr. Blyth, not having seen dark-billed birds in India, was quite justified in thinking then that our pale-billed bird was of another species. With the aid of a powerful glass I examined every *Neophron* I saw at Delhi; and few indeed had light bills.

I remain, yours faithfully,

W. E. BROOKS.

Glasgow, 4th February, 1870.

SIR,—Having been engaged for some years in the preparation of a work on the Birds of Scotland, I have personally made particular inquiries throughout almost every county regarding the occurrence of the rarer species, and have been rewarded by the acquisition of many facts of interest, which I have no doubt will serve a useful purpose when they are published.

Among birds of this class that have lately come into my hands, I find about half a dozen species that are not mentioned in the last edition of Yarrell's 'British Birds'; and as two of these possess an additional interest from the fact that, being

nearly allied to birds already known as British, they may have been overlooked and are likely to occur again, I beg your permission to put them on record in 'The Ibis.'

Last May, when at Brechin, in Forfarshire, I was fortunate in procuring a specimen of the American Gos-Hawk (*Astur atricapillus*) which had been killed a few months previously by a keeper in the vicinity of Shehallion, in Perthshire. It was sent by him, along with a number of Snow-Buntings and other birds, all recently skinned, to the person from whom I got it; the specimen had been very roughly prepared, as, on afterwards proceeding to relax it, the Glasgow bird-stuffer, whom I employed to mount the skin, found that the brains and eyes had not been removed. This specimen, which is an adult, and apparently a female, is 24·5 in. in length; the wing from flexure measuring 14 inches, and the tail 10·5 in.

The other bird I have at present to refer to is the Green-rumped Tatler (*Totanus chloropygius*), a specimen of which (the sex not ascertained) was shot some years ago by the late William Gordon, of Airdrie, somewhere on the banks of the Clyde, in the higher grounds of Lanarkshire. This bird remained in Mr. Gordon's hands until his death in August last. He had often referred to it as a species which he could not make out, but had never shown it to any one qualified to give an opinion. His entire collection was brought to Glasgow and submitted to me early in September, but was found to contain nothing of consequence except this Sandpiper and a Brown Snipe in winter plumage, killed about the same time and place, which he had been unable to identify. To ordinary observers the Green-rumped Tatler strongly resembles the Wood-Sandpiper (*T. glareola*), differing only from that species in the absence of the white shaft of the first quill, and in having the tail-coverts greenish instead of white. It is possible, therefore, that, like other North-American birds (as for instance the Gos-Hawk just mentioned) bearing a likeness to British species, it may come oftener to this country than collectors are in the mean time aware of.

I am, Sir, your obedient servant,

ROBERT GRAY.

Simla, 14 Feb., 1870.

SIR,—A week ago I received the volume of 'The Ibis' for 1868, and observe that Lieut. Beavan (pp. 496, 497) proposes for the Himalayan race of *Dicrurus longicaudatus* the name of *Buchanga waldeni*. The species thus characterized by my friend is, as you rightly imagine (*loc. cit.* note), my *D. himalayanus* (*tom. cit.* p. 200)—the most common bird that we have in the Himalaya, and abundant at this place and elsewhere.

I am, &c.,

ROBERT C. TYTLER, Col.

SIR,—In a letter addressed to you by Mr. Hume (*anteà*, p. 142) that gentleman announces the existence in India of two species of *yellow-headed* Wagtails. Not having seen the examples on which this statement is founded, I shall not venture an opinion as to its accuracy; but, with your permission, I wish to make the following observations on the general subject:—

1. *Motacilla aureocapilla* is Lesson's title, not Vieillot's.
2. Lesson's diagnosis (*Tr. d'Orn.* p. 422) contains no character inconsistent or conflicting with the characters given by Pallas of *M. citreola*.
3. Lesson gives no measurements.
4. Bonaparte and Mr. G. R. Gray identified *M. aureocapilla*, Lesson, with *M. citreola*, Pallas.
5. Dr. Pucheran, after a critical comparison of Lesson's type-specimens in the Paris Museum (*Arch. du Mus.* vii. p. 377), pronounced it to be the same as *M. citreola*, Pall.
6. An adult male of *M. citreola*, Pall., from the shores of Lake Baikal, in my collection, has the wing 3·5 in. long.

If two distinct specimens of *yellow-headed* Wagtails do inhabit India, it will have to be determined whether either belongs to Pallas's species, and, if either, which of the two. These facts being ascertained, it must then be decided to which of the two Mr. Hodgson's title of *Budytes calcaratus* applies; and if an untitled species remains, it will require a new name. Judging from the length of the wing in Mr. Hume's alleged *B. citreolus* (Pall.), it must be distinct from the Siberian bird,

being less by fully .5 in. ; but, in truth, mere dimensions, except where of fully adult individuals, are not trustworthy data on which to build species.

Yours, &c.,

WALDEN.

Chislehurst, Feb. 17, 1870.

SIR,—The nidification of that noble bird *Mycteria australis* was always a puzzle to me ; for although very common in the North-Western Provinces of India, I could find no notice of its nest or eggs in any work within my reach, and Dr. Jerdon says nothing definite about the latter. I had often seen the birds flying for two or three miles in a direct line towards large trees standing by themselves in the midst of extensive plains of grass near Etawah, and I had as often seen huge nests, apparently 6 feet every way, composed of sticks, on the summits of the said trees, on which the birds alighted, and stood out in bold relief against the sky. During the rains, as it was the season for the breeding of the allied species, I had continually sent men up the trees to reach these nests, but had ever found them empty. The getting at them is no easy matter ; for the sticks of which they are composed are stout, and often prickly, and form a regular *chevaux-de-frise* all around ; while an attack from such a large bird, when poised and scrambling at such a dizzy height, would be no joke. I therefore found difficulty in persuading the stoutest herd-boys to climb to them. However, my perseverance was at last rewarded ; for upon the 27th December, 1867, my man brought me down four eggs, one of them addled, and three with young birds in them, showing how late in the season they incubate. The season had been very hot and dry. This species would appear to lay at most four eggs ; but the general number is three, being 2.7 by 2 inches. In one nest, on the 27th of the same month, I found two young birds, which flew off when disturbed—also, in another, one nearly full-grown on the 24th. I gave my friend Mr. E. Brooks the localities of four or five nests, but no eggs were laid in these, in 1868. He, however, knowing when and where to look, found three more nests, and took from them one, two, and four eggs respectively. He writes to

me that the eggs were "exactly like" that which I gave him, and he adds that he obtained the first in the middle of October, so that those found by me must have been unusually late. The trees are all at some distance from water; but in a country so flooded as that where they are found is, this can be of little consequence to a bird so strong of flight.

I have no doubt but that Ring-tailed Fish-Eagles and other birds use the nests when the young Storks are hatched and flown.

I am, &c.,

C. HORNE.

Innisfail, Upper Norword, Feb. 18, 1870.

Chester Castle, 1st March, 1870.

SIR,—I should like to add a little to the information published by Mr. Allan Hume in regard to the breeding of the Indian Stilt, *Himantopus candidus* (*anteà*, p. 145). When I was in Secunderabad during 1868, Lieut. Feilden told me that in June 1867 he had found this bird breeding around a *jheel* some thirty miles from that place, near the village of Toomulgoodium, on the Masulipatam road, and that he had procured and sent to Europe a considerable number of its eggs. He noticed about twenty nests with eggs on this occasion. In June 1868, not being well enough to go myself, I asked him to visit the spot again; and he did so, but on his return reported that, owing to the excessively hot weather, the *jheel* had dried up to half its size in the preceding year, and that not a single bird of the species was to be seen. I met him last month at his home in England, and he gave me eggs of this bird from this locality, and also eggs of *Lobivanellus goensis*, taken from the same place. As Mr. Hume remarks, there is no difficulty in distinguishing the eggs of the two species. The fact of *H. candidus* breeding one year at this *jheel* near Secunderabad and deserting it the next is singular. Could the disturbance of their nests have caused these birds to change their breeding-quarters?

I hope Mr. Hume will note whether the colony at the Sooltanpoor salt-works breeds there this year.

I am, &c.,

H. W. FEILDEN.

SIR,—In the ‘Record of Zoological Literature’ (v. p. 74) I find the following passage :—

“*Stenopsis candicans*, *S. langsdorffi*, and *S. platyura*, as also *Antrostomus cortapau*, are described as if they were new species; but the first three, though no mention of the fact is made by the author, have been previously described by Mr. Selater, (cf. Zool. Rec. iii. p. 82), and the last is confessedly the same as *A. rutilus*, Burm., Syst. Uebers. ii. p. 385; A. von Pelzel, Orn. Bras. pp. 12, 13, 49–56.”

Evidently it has escaped the notice of the Recorder that I have mentioned Mr. Selater’s descriptions (*op. cit.* p. 49, note 2). As to *A. cortapau*, I have (p. 55) expressed my opinion that Lichtenstein’s name being published in the ‘Nomenclator Avium’ without any description, it would be appropriate to retain the denomination given by the discoverer of the species—Natterer.

I am, Sir, with the expression of my esteem,

A. VON PELZELN.

Vienna, 8th March, 1870.

[** I very much regret the oversight of which my correspondent with some justice complains; but I think I may plead in excuse the fact that he relegated a reference to Mr. Selater’s prior diagnosis of the species named to a foot-note instead of inserting it in the text.—A. N.]

SIR,—Allow me to call your attention to the fact that my *Pitta krefftii* (Atti della Soc. Ital. Sc. Nat. xii. p. 551) is certainly the same as *P. simillima*, Gould (P. Z. S. 1868, p. 76), the description of which in some unaccountable way escaped my notice.

I remain, Sir, &c.,

T. SALVADORI.

Zoological Museum, Turin, March 9th, 1870.

11 Hanover Square, March 12th, 1870.

SIR,—In Lord Walden’s excellent article on the Sun-birds of the Indian and Australian regions in the last number of ‘The Ibis,’ it is well remarked (p. 35) that there must be some mistake about the habitat of *Æthopyga dabryi* as given by M. Verreaux, namely, “*le nord de la Chine*.” I am fortunately able to confirm Lord Walden’s criticism, and to give the

exact locality of this fine species. The type-specimen of this species was from the collection formed by Msgr. Chauveau on the hills above Ta-tsien-leou, which border the eastern boundary of the Chinese province of Sechnen, and was transmitted by him to M. Dabry, the French Consul at Hankow. This collection, which I had the pleasure of examining shortly after its arrival in Paris, likewise contained the new *Lophophorus lhuysi* and the new *Ithaginis geoffroyi*, also described by M. Verreaux, besides some other remarkable novelties. Some account of it is given in the Bulletin de la Société d'Acclimatation for 1867 (pp. 706-711).

Lord Walden remarks that *Æthopyga dabryi* was likewise obtained by Dr. Anderson in Yunan. As a parallel instance of distribution it may be remarked that in Yunan Dr. Anderson also entered upon the range of *Thaumalea amherstiae*, which, according to Msgr. Chauveau, is very abundant* in the mountains above Ta-tsien-leou.

I am, Sir, your obedient servant,

P. L. SCLATER.

Dunipace, Falkirk, March 15, 1870.

SIR,—In the admirable paper on the Birds of Turkey, contributed by my friend Capt. Elwes and Mr. T. E. Buckley to the last number of 'The Ibis,' I observe a statement (*antè*, p. 74) respecting the sites of Peregrine Falcons' nests in Scotland with which I cannot concur. I am personally acquainted with a considerable number of such nests, and have been led to a conclusion, as to their position, almost the opposite of the statement in question. In one district alone, irrespective of others, I know of eight nests of *Falco peregrinus*, only two of which are in close proximity to "either the sea or an inland loch;" and of the others the nearest is not less than half a mile removed. I think that the remark of Messrs. Elwes and Buckley must be held as applicable only to certain districts in Scotland, and not to that country as a whole.

I am, &c.,

JOHN HARVIE BROWN.

* Cf. P. Z. S. 10th March, 1870.

SIR,—As very little seems to be known respecting the breeding-habits of the Snowy Owl (*Nyctea nivea*), it may not be entirely without interest to some of your readers if I send you some particulars which I have lately received, together with seven eggs—six from one nest and one from another—from a correspondent at one of the Moravian missionary-stations on the coast of Labrador. The nest, which consists of only a few feathers, is generally placed on a ledge of rock where there is a slight hollow, sufficient to prevent the eggs from rolling out, but sometimes, in the absence of suitable rocks, on the ground. The usual number of the eggs is eight; these are not all laid and brooded at one time, but the first two are often hatched by the time the last is laid, so that you may find in one nest young birds and fresh eggs, and others more or less incubated.

“In the case,” my correspondent says, “of the nest I had the pleasure of finding in this neighbourhood, from which I send you the eggs, I waited till four eggs were laid, and then took the first two I had seen. In a few days two more were added to those left, which former I again took. So long a time passed without more being added, I feared the two eggs I had left would be nearly hatched, and took them away. For a few days the birds remained near, and would probably have laid again, but were disturbed by the Esquimaux.”

I may add that in size the eggs I received are as nearly as possible the same one with the other, and the same also as a single egg I have, obtained through Mr. Duff from Lapland, and that they are a size smaller than the smallest eggs of any clutch of the Eagle Owl in my collection.

I am, Sir, &c.,

HUBERT S. HAWKINS.

Beyton Rectory, March 18th, 1870.

SIR,—I wish to offer a few observations in reply to Dr. Salvadori's letter (*anteà*, pp. 153, 154). With regard to *Larus gelastes*, he cannot possibly have seen the specimen to which I referred; otherwise he could never have stated that a Gull labelled by Prof. Doderlein as obtained in May or June, and suffused

with the brightest rose-colour, was a "*L. ridibundus* in winter dress." At this distance, I cannot attempt to disprove his assertion that the two small Owls in the Museum at Catania are the South-American species *Glaucidium pumilum* and not *G. passerinum*; but, whatever they are, Prof. Zucarelli-Patti, who took them out of the case for my inspection, assured me that seven of them came into his hands in the flesh on one occasion, of which he skinned and mounted the two in question. *Hirundo cahirica* does not seem to have made the same impression on Dr. Salvadori as it did on me, the family being one in which I take a great interest.

It is very satisfactory to learn that specimens of *Francolinus vulgaris*, recently received from Terranova, are in the Museum at Palermo, as, up to February 1869, Prof. Doderlein had certainly not been able to obtain it in the flesh, and, although he maintained that it was still found in Sicily, I could find no one else who did—Cavaliere Luigi Benoit, at Messina, Prof. Zucarelli at Catania, and all sportsmen with whom I conversed agreeing that the bird no longer existed in that island. I certainly flattered myself that, in the event of its turning up at Terranova, I should have been amongst the first to receive direct information from Prof. Doderlein; but up to the present moment he has not written a word on the subject. As Dr. Salvadori has doubtless read Lord Lilford's exhaustive paper (*Ibis*, 1862, pp. 352–356), it is to be regretted that he has not seen fit to give us a few more particulars, unless, indeed, he considers the Francolin so common in Sicily that the dates and localities of capture are not worth mentioning.

I remain, &c.,

HOWARD SAUNDERS.

London, 21st March, 1870.

[*.* As Dr. Salvadori's letter appeared in print, we think we are in duty bound to insert the whole of Mr. Saunders's; but justice to the former compels us to say that he subsequently wrote to us, asking us to withdraw the passage relating to *Larus gelastes*. Unfortunately his letter did not reach us in time to enable us to comply with his wish.—ED.]

London, 28th March, 1870.

SIR,—When in Paris last week, I observed in the Garden of the Société d'Acclimatation two Guinea-fowls, which, upon examination, appear to me to be undescribed, and I therefore wish to bring the species to which they belong before ornithologists as

NUMIDA VERREAUXI.

N. capite cristato intense nigro; gula rubra, collo cæruleo, regione ophthalmica nigra; cinctu collari pectoreque nigris, hoc castaneo tineto, corpore reliquo nigro cærulescenti-viridi punctato: remigibus nigris: 5o., 6o., et 7o. albo-fimbriatis.

Long. tot. 22, alæ 10, caudæ 6, rostri 1, tarsi 1·75 unc.

Hab. Natal.

Head with a full, long, upright, jet-black crest, as in *N. cristata*, the rest with the face bare. Black about the eyes, sides and back of neck light blue, and throat, from the base of the bill to the feathers of the breast, bright red. The skin of the neck full behind, forming a plait about midway, and falling in a kind of fold over the feathers of the lower part. Lower part of the neck behind, and upper part of breast, black, having a rich chestnut tint on the breast. Rest of the plumage black, thickly spotted with light bluish-green. Wings spotted like the body; primaries dark brown; secondaries black, with their inner webs spotted; outer webs of the first four, with the exception of a narrow line along the shaft, white; outer web of the rest unspotted, black, with lines of bluish-green running their entire length, as though the spots had become confluent. Tip of tail black, the spots being almost obsolete. Thighs black. Bill light horn-colour. Legs and feet black. There is no difference in the plumage of the sexes.

This species is nearest to *N. cristata*, but presents various differences distinguishing it therefrom. The black on the breast is much more extensive, and the red throat is very conspicuous in the living bird; and the form of the plait and fold of the skin of the neck would seem to distinguish it from all its allies. The first example was brought to France by the late M. Edouard Verreaux, and is now in the Paris Museum. This, as well as the other specimens subsequently received, came from

Natal. My friend M. Jules Verreaux, after whom I have great pleasure in naming this species, also met it during his first voyage to Natal in the year 1827. It appeared to keep in small flocks, of from seven to eight individuals, always remaining in the bushes that bordered the rivers, and was very wild, so much so, in fact, that during the several journeys which he made into the interior, he was never able to procure more than three specimens, which unfortunately were lost with all his other large collections by shipwreck on the coast of France, on his return in 1840.

I am, &c.,

D. G. ELLIOT.

SIR,—I should like to mention in ‘The Ibis’ that I have just received from my friend Mr. Brooks a pair of *Sylvia melanopogon*, Temminck—*Amnicola melanopogon*, Gerbe (Orn. Eur. i. p. 527), shot at Etawah in the North-western Provinces of India, an entirely new locality for this rare warbler, of which I never before saw but the single example obtained on my expedition to Palestine (P. Z. S. 1864, p. 438; Ibis, 1867, p. 77).

I am, &c.,

H. B. TRISTRAM.

The meaning and derivation of the word “lag” in the common English name for *Anser ferus* has long been a puzzle to most people, and we are fortunate in being able to give what we believe to be its true signification. With this we have been kindly favoured by so great an authority on early English as Mr. Skeat. The adjective “lag” means originally late, last, or slow, whence we have “laggard” and “laglast,” a loiterer, “lagman,” the last man, “lagteeth,” the posterior molar or wisdom-teeth (as the last to make their appearance), and “lagclock,” a clock that is behind time. Accordingly the Grey Lag Goose is the Grey Goose which, in former days, *lagged* behind the others to breed in our fens, as it now does on the Sutherland lochs, when its congeners had betaken themselves to their more northern summer-quarters. This solution of an old difficulty will, we think, be considered no less satisfactory than simple.

It is with very great regret that we have to announce to our readers the death of a frequent and valued contributor to our pages, Mr. ROBERT CECIL BEAVAN, Lieutenant in the

Bengal Staff Corps. After nearly ten years' service in India, he returned to England in the spring of 1867 on sick leave; but his health improving, he sought and obtained the appointment of Zoologist to the Abyssinian Expedition, then preparing (Ibis, 1868, p. 134). A relapse, however, compelled him to forego this much-desired chance of distinguishing himself, and he passed many months of suffering at home, which he again quitted for India in the autumn of 1868. Arrived there, he was in hopes of procuring a post in the Forest Department, which would have given him excellent opportunities of continuing the zoological observations and studies to which he was so strongly attached; but unfortunately his malady increased, and, notwithstanding a visit to the Himalayas, he was once more sent home as an invalid, when he died at sea on the 3rd of February last, at the early age of *twenty-nine*. We have still in hand the manuscript of the concluding portion of his 'Notes on Various Indian Birds,' which we hope shortly to publish, for none can read the papers contributed by him to this journal without recognizing in them the work of a true naturalist; and the loss of so promising a labourer in the field of Indian Ornithology will be deplored by all.

Though we have far exceeded our prescribed limits, the energy of our contributors is such, that there yet remains to us a great mass of papers the publication of which has for the present to be deferred. A large number of ornithological works also, some of much more than ordinary interest and excellence, still require notices, notwithstanding the space devoted to that branch of our labours in this and our preceding Number. Nor is the activity of ornithologists likely to be soon diminished; in this country alone we hear that a work of unusual importance is contemplated by two of our friends, whose competency for their self-imposed task will be fully recognized by all as soon as the scope of the publication and the names of its authors are announced, while a new edition of Yarrell's 'British Birds' (the standard authority on the ornithology of these islands) is said not only to be in preparation, but its commencement likely to see the light about the close of the present year.

THE IBIS.

NEW SERIES.

No. XXIII. JULY 1870.

XXI.—*On the Birds of Novaya Zemlya.*

By GEORGE GILLET, F.Z.S.

IT is with some hesitation that I venture to submit this short notice of the birds observed by me during a trip to Novaya Zemlya to the readers of 'The Ibis.' In the first place, the expedition which I joined was in no way organized for scientific purposes, being simply a sporting trip for hunting the White Bear, Walrus, and Seal; and Spitsbergen being, at any rate as regards the first two animals, nearly exhausted, we determined to try the less known and less disturbed hunting-grounds of Novaya Zemlya. In the second place, we were all rather sportsmen than naturalists, though I have always been more or less a collector of birds, and have had a good many years' experience in Norway of the commoner Northern species. Besides this, we were unavoidably delayed in starting by the amount of fitting and strengthening required by our vessel, so that instead of leaving Norway, as we had originally intended, in the beginning of May, it was the 4th of July before we embarked at Tromsö, and the 17th of that month before we sighted land. The unknown and dangerous nature of the coast, the absence of any correct charts, and the generally stormy and foggy weather we met with during the whole cruise prevented our getting on shore, except on some few occasions; so that my opportuni-

ties of observation were necessarily very limited, and consequently I can offer but a meagre and incomplete account of the ornithology of this wild and desolate region. I will endeavour, however, to give as correct a list as possible of the birds actually observed by me, though about some, as will be noted, I am a little doubtful; and I will also append a few remarks on the habits and localities of some of the species. Since the year 1837, when Dr. von Baer* explored these islands, I believe no naturalist has visited them; and he does not appear to have gone further north than Matthew's Straits, which divide the Northern from the Southern Island. I imagine, however, from all I hear that the portion of the coast that he explored is the richest field for the ornithologist. We, unfortunately, had not time to visit this part. In the more northern part of the country, namely from Black Point, in lat. $75^{\circ} 33' N.$ to Cape Nassau, in rather more than lat. $76^{\circ} 30' N.$, where we first got among the ice, I saw merely the ordinary Arctic sea-birds, which have been so often described by various writers that I need not say very much about them.

? 1. *FALCO GYRFALCO*, Linn. Gyr-Falcon.

I saw two large Falcons, which I imagine were of the Norwegian form, flying over the ship by Vaigatz Island, at the entrance of the Kara Sea; both were in immature plumage; but I could not obtain a specimen.

? 2. *FALCO PEREGRINUS*, Gmel. Peregrine Falcon.

It is with great doubt that I record this species; but I will briefly relate the circumstances under which I believe I saw it, and my grounds for so considering it. While on shore in Matthew's Straits, on the 5th of August, a stormy wild day, with a gale blowing from the south-west and driving showers of sleet, my attention was aroused by the scream of a Falcon; and on climbing a rough hill overlooking a deep rocky ravine, I saw the old male bird fly from a stone some two hundred yards

* "Description of Animal Life in Nova Zembla. By K. E. von Baer." Ann. Nat. Hist. iv. pp. 145-154. [Translated from 'Archiv für Naturgeschichte,' 1839 (i. pp. 160-170), where the paper, originally published, under the title of "Vie animale à Nowaia Zemlia," in the 'Bull. Sc. de l'Acad. de St. Pétersb.' (iii. pp. 343-352) is reprinted.—ED.]

off. He was soon joined by the female, which came from the ravine, where she doubtless had her nest. They soared in wide circles high above me, but would not come within shot, and it was impossible to get nearer to the nest. From the short glimpse I got of the male's dark blue back and the reddish tinge which I fancied I could detect on his breast, I conjectured that these birds were Peregrine Falcons: but I am by no means confident on the point; and the suggestion which has since been made to me, that they were Gyr-Falcons, is very possibly true.

† 3. *NYCTEA NIVEA* (Daud.). Snowy Owl.

Very common all along the coast. I never saw this bird attempt to feed on blubber or carrion, indeed I never saw it on the ice at all; but it is possible that, in the winter, or when pressed by hunger, it may occasionally pick up offal, as Admiral von Wrangell has asserted*. My impression is that it lives a good deal on young sea-fowl and Arctic Foxes. Lemmings† no doubt are its favourite food; but I saw no traces of any great quantity of them in *Novaya Zemlya*, nor did I see a single live one. In some places, however, there were their burrows and a few dried remains. I shot three Snowy Owls in various localities. They were all remarkably fat, having a thick hard layer under the skin, answering to the blubber of a Seal. Their stomachs were empty.

* 'Narrative of an Expedition to the Polar Sea,' &c. (Sabine's translation) London: 1840, p. cxxiii; 2nd ed. 1844, p. 490.

† As an instance of its fondness for Lemmings, and showing how it follows these curious little animals in their migrations, I may mention that in the part of Norway where I was staying in 1868, there was a perfect plague of Lemmings—in the valley, in the forest, on the fjeld, they were squeaking and running about by thousands; during the autumn they travelled down to the fjord, and were drowned, as usually happens. A few stragglers remained till the spring of 1869; but eventually all disappeared. In the summer of that year more than a dozen young Snowy Owls were taken from different nests in the neighbourhood, and several Arctic Foxes were shot, both of which animals must have followed the army of Lemmings, and staid to breed in the district. I saw one Arctic Fox alive, which had been caught in the streets of Thronhjem.

4. *PLECTROPHANES NIVALIS* (Linn.). Snow-Bunting.

Very common wherever we landed.

+ 5. *HIRUNDO RUSTICA*, Linn. Chimney-Swallow.

On the morning of July 22nd a pair of these birds were seen flying round the ship as she lay at anchor in a small bay, in lat. $76^{\circ} 10'$ N. I was surprised to meet with them so far from their usual haunts; but I presume they would breed in the rocky cliffs. No more were seen in any part of Novaya Zemlya.

+ 6. *EUDROMIAS MORINELLUS* (Linn.). Dotterel.

On the 5th of August, at Matthew's Straits, I saw an old bird of this species, with a nearly full-grown young one, which latter I shot. I subsequently saw some more by a river on the eastern side.

+ 7. *ÆGIALITIS HIATICULA* (Linn.). Ringed Plover.

I saw several families of these birds in Matthew's Straits, and also on the eastern side.

+ 8. *TRINGA MARITIMA* (Linn.). Purple Sandpiper.

Very common both in Matthew's Straits and on the eastern coast. One came on board during a storm in the Kara Sea, and I caught it in my hand. When released it did not offer to fly away, and staid on board about two days; but it succumbed to the fearful weather and heavy rain, and I found it lying dead and drenched under one of the boats.

+ 9. *STERNA MACRURA*, Naum. Arctic Tern.

Tolerably numerous both on the western and eastern coasts.

+ 10. *PAGOPHILA EBURNEA* (Phipps). Ivory-Gull.

I did not see any breeding-places of this species; and though it was very numerous wherever there was ice, I could not detect any but adult birds. I have frequently seen it settle on the water (*cf.* Ibis, 1865, p. 507).

+ 11. *RISSA TRIDACTYLA* (Linn.). Kittiwake.

This species is common all along the coast.

12. *LARUS GLAUCUS*, Gmel. Glaucous Gull.

Plentiful everywhere; it does not seem to confine itself to the

ice so much as many of the other birds; we found it all along the coast, both on the eastern and western sides.

+ 13. *STERCORARIUS POMATORHINUS* (Temm.). Pomatorhine Skua.

+ 14. *STERCORARIUS PARASITICUS* (Linn.). Richardson's Skua.

+ 15. *STERCORARIUS LONGICAUDUS*. Vieillot. Buffon's Skua.

The first of these three species was by no means so common as the two latter, but it was still tolerably abundant. The other two were very numerous, both on the west coast and in the Kara Sea. I saw them in all stages of plumage, from the dark-brown of the younger birds to the fine delicate colouring of the adults. Every flock of Kittiwakes was attended by numbers of these birds, swooping at them like Hawks, and obliging them to disgorge their prize. The fish on which these Gulls were feeding were those called by the Norwegian fishermen *Lodde*, and are the favourite food of the Cod. I am not acquainted with their English or scientific name*.

+ 16. *PROCELLARIA GLACIALIS*, Linn. Fulmar.

This bird is a constant attendant on ships in the Arctic seas. Its flight is exactly like that of a Woodcock, as it skims over the waves with its large bright eye constantly peering into the water for the chance of blubber. It is easily caught with a baited hook, and when placed on deck is quite unable to rise or even to stand upright, but shuffles along by the help of its wings. It will readily eat blubber, however, directly it is caught, and when thrown overboard will come again at the hook without the least hesitation. It never, so far as I know, settles on flat ice; on one occasion only did I see one on the sloping side of an iceberg; usually it is on the wing or sitting on the water.

+ 17. *CEPPHUS MANDTI* (Licht.)? Dovekie.

A Black Guillemot is very common everywhere, and is most likely of the northern form; but not then knowing of the supposed existence of more than one, I did not examine any specimens.

* [According to Prof. Nilsson (Skan. Faun. iv. p. 441), the "*Lodde*" is *Osmerus arcticus* (Fabr.).—ED.]

- + 18. *URIA BRUENNICHII*, Sabine. Brünnich's Guillemot.
Common along the coast, breeding in all the cliffs.

- + 19. *MERGULUS ALLE* (Linn.). Little Auk.

Tolerably numerous, chiefly in the north. The peculiar cry of these birds had a very wild effect in the calm light nights, especially when mingled with the hoarse bellowings of the Walruses.

- + 20. *FRATERCULA GLACIALIS* (Leach)? Puffin.

I regret that I was not previously acquainted with the asserted distinctive characters of the Northern Puffin, I therefore cannot positively say that that was the species observed by me. It was not very common.

- ? 21. *COLYMBUS GLACIALIS*, Linn. Great Northern Diver.

22. *COLYMBUS ARCTICUS*, Linn. Black-throated Diver.

In the Kara Straits were several Divers; some, from their size, I took to be of the first-mentioned species, and on a small tarn in one of the islands I made out a pair of the second. No doubt *C. septentrionalis* is also to be found here, as stated by Dr. von Baer; but I did not see one to identify it.

- + 23. *BERNICLA BRENTA*, Steph. Brent-Goose.

Common in Matthew's Straits.

24. *ANSER SEGETUM*, Gmel.? Bean-Goose?

There were large flocks of grey Geese in Matthew's Straits and other places. One specimen was obtained by a boat's crew who were encamped; but I did not see it. I can only guess at the species, which may possibly prove to be *A. brachyrhynchus*. Dr. von Baer mentions a species of Swan as being found in Novaya Zemlya; but I did not see any, nor did I hear of them from the Walrus-hunters up there.

- ? 25. *ÆDESMIA NIGRA* (Linn.). Common Scoter.

In Schirochika Bay, at the extreme south of the island, I saw several small flocks of what I took for this species; but none having been obtained, I cannot speak with certainty on the point.

+26. *HARELDA GLACIALIS* (Linn.). Long-tailed Duck.

Common in Matthew's Straits, but I did not see them elsewhere.

+27. *SOMATERIA MOLLISSIMA* (Linn.). Eider-Duck.

Tolerably common all along the coast, but I did not see any large flocks of them.

+28. *SOMATERIA SPECTABILIS* (Linn.). King-Duck.

In Matthew's Straits on the 6th of August I saw several of these birds in small flocks, all apparently immature males. I shot two specimens: their wings were entirely destitute of quill-feathers, so that they could not fly; but they dived in a wonderful way, and were very difficult to get. They were apparently full-grown; but were dark brown on the head and back and blackish in places. The protuberance on the bill was of a rich orange, shading off on the bill itself to a pinkish flesh-colour; the irides dark.

This ends my list. We had intended on our way back to visit Kostin Schar, which is said to be a favourite resort of all kinds of birds; but it was the 5th of September before we left Schirochika Bay, and we thought it better to take advantage of a strong north-easterly breeze and steer for Norway, as the days were getting short and the nights dark, and there was no knowing how soon the ice might begin to form in the bays, though at that time they were perfectly open. I have no doubt a competent naturalist might find much to interest him in this desolate and little-visited region.

[** As Dr. Von Baer's paper, already mentioned, contains the only information hitherto known to us respecting the birds of Nova Zembla, it may be as well to remark that he mentions the appearance there of *twenty-four* species, *six* of which did not occur to our contributor. They are an "Adler" (Eagle), about which there may be, it is said, some mistake, *Strepsilas collaris*, *Larus canus*, *Lestris catarrhactes*, *Colymbus septentrionalis*, and *Cygnus musicus*. Of the rest, *two*, a "Falken" (*Falco*) and a *Procellaria*, were undetermined by Dr. von Baer, but are doubtless referable to species comprised in Mr. Gillett's list, as are *four* more, though assigned by the former to nearly allied

species. There are *Uria grylle*, *U. troile*, *Mormon fratercula*, and the "Saatgans" (*Anser segetum*), which, without much fear of error, may be regarded as identical with those numbered 17, 18, 20, and 24 of the present paper. The species unquestionably mentioned by both observers in common are *twelve*:—Nos. 3, 4, 8, 9, 10, 11, 12, 19, 23, 26, 27, and 28 of our contributor's list, while to him alone we are indebted for the recorded fact of the appearance of *ten*—his Nos. 1 or 2, 5, 6, 7, 13, 14, 15, 21, 22, and 25.—ED.]

XXII.—*Additional Notes on various Indian Birds.*

By R. C. BEAVAN, Bengal Staff Corps, C.M.Z.S.

[Concluded from 'The Ibis' for 1869, p. 426.]

254. UPUPA EPOPS. European Hoopoe.

THE Hoopoe has evidently the power of smelling grubs and worms that lie an inch or two below the surface of the ground. It is an interesting sight to watch one feeding. His bill appears to quarter every inch of the soil; and when a grub is discovered, down it goes deep into the ground, seizes the grub, which is then thrown into the air (Hornbill-like), caught, and swallowed.

I noticed a species of Hoopoe which was probably *U. longirostris*, Jerdon (B. Ind. i. p. 393), in Burmah, in August, 1865, on the banks of the river Salween, in the Tennaserim provinces, but had no opportunity of securing the specimen in question.

256. LANIUS LAHTORA. Indian Grey Shrike.

This species is particularly abundant about Umballah, where I procured several fine examples about the station in October 1866. I subjoin the dimensions, taken from two specimens in the flesh, the first in April, the second on the 23rd of October.

Length.	Wing.	Tail.	Tarsus.	Bill from front.	Bill from gape.	Spread foot.	Extent.
9.75	4.125	4.5	1.125	.7	....	....	13
9.875	4.125	4.875	1.125	.6875	1	1.25	13

Whilst on the subject of Grey Shrikes I may mention here that in the English channel, off the coast of Cornwall, a specimen of the Grey Shrike, *L. excubitor* of Europe, came on board the ship

in which I then was, in October 1864, seized a living specimen of the Golden-crested Wren, *Regulus aurocapillus*, of which several had previously come on board, and sat quietly devouring it on the main ratlines.

257. *LANIUS ERYTHRONOTUS*. Rufous-backed Shrike.

This species occurred abundantly in the neighbourhood of Simla, in 1866. The following dimensions were taken from specimens in the flesh, the first two at that place, 11th and 29th of June, the third at Umballah, 26th of Oct. 1866.

Length.	Wing.	Tail.	Tarsus.	Bill from front.	Bill from gape.	Spread foot.	Extent.
9·5	3·625	4·375	1·0625	·625	....	....	10·75
8·875	3·5	4·5	1·0625	·625	·9375	1·375	....
8·75	3·5	4·0625	1·125	·5625	·875	1·625	10·5

The orbit and gape are plumbeous; the bill and legs black, or the latter may be perhaps more correctly described as being dark plumbeous, with the soles lighter. On the 8th of August a nest containing two eggs, with the male bird, were brought to me at Simla by a sepoy, who told me that he had seen the female fly off the nest, and that it belonged to this species. The eggs are white with a very faint green tinge, blotched and dotted with brown spots, most profusely so towards the blunt end. They measured ·9375 by ·7.

This species extends as far as Umballah, where I procured a fine specimen on the 26th of October, 1866, the dimensions of which I have given above.

259. *LANIUS NIGRICEPS*. Black-headed Shrike.

This bird is apparently rare in the district of Maunbhoom, where it goes by the name of "*Bugga-ker-kata*." I observed a pair in the tree-jungle between Saltoorce and Rognathpore; and on one other occasion I saw one, on the march into Perulia from Raneegunje.

260. *LANIUS HARDWICKII**. The Bay-backed Shrike.

The most abundant and characteristic Shrike near Umballah, and it apparently extends some little distance up the hills; for I

* Potius *L. vittatus*, Valenc. *vide* Walden, Ibis, 1868, p. 316.

procured specimens at Simla in July, 1866, in the plumage of the year, so that they had evidently bred in the neighbourhood of that station, although, perhaps, at a slightly lower elevation. An adult procured at Umballah on the 22nd of October, 1866, measured :—Length 7·5 ; wing 3·5 ; tail 3·75 ; tarsus ·875 ; spread foot 1·25 ; bill from front ·5 in., from gape ·75 ; extent 10 inches. The plumage of the young bird of the year is not described by Dr. Jerdon. Col. Tytler procured the fully fledged nestling at Simla early in July, 1866 ; and I got one in a slightly more advanced stage towards the end of that month, at the same place. The bill in this specimen is of a lighter hue than in the adult bird, and the legs bluish-leadен instead of black. The throat is pure white, breast and underparts a duller white with faint brown cross bars. The head is dull white, faintly barred with brown, which extends along the back to the faintly rufous upper tail-coverts, the whole barred ; wings brown, with white edges to the secondaries and tertials, and the wing-coverts slightly rufous and barred. Tail rufous, the outer webs of the outer pair of rectrices white, and both these and the next two or three pairs on each side white-tipped—all but the outer pair having a bar or pencilling of black across both webs.

261. *LANIUS CRISTATUS*. Brown Shrike.

A specimen was procured by me at Moulmein on the 14th of September, 1865, of which I subjoin the dimensions :—Length 8 ; wing 3·375 ; tail 3·5 ; tarsus 1 ; bill from front ·5625 ; extent about 10 inches. Irides dark brown, legs bluish-leadен, bill dark horny above, with a slightly leadен tinge below. Several of these birds had evidently then but just arrived, so that a reference to my previous note on the species (*Ibis*, 1865, p. 418) shows that they arrive almost simultaneously both there and near Calcutta, but apparently first in Burmah. Where, then, do they come from? (*Cf. Ibis*, 1867, p. 214.)

265. *TEPHRODORNIS PONDICERIANA*. Common Wood-Shrike.

Of the nests I before mentioned (*Ibis*, 1865, p. 418), one was brought to me in Maunbhoon on the 27th of March, 1865, and another early in April of the same year. I have since observed this species at Umballah, and killed my first specimen there on

the 30th of October, 1866, in a garden. On the morning of November 9th I procured two more from near the same spot; so that the species is evidently not uncommon there, although, from its peculiarly quiet and silent habits, it is likely to escape observation, and indeed had done so in the case of Dr. Scott, who told me that it was the first time that he had ever seen the bird.

267. *HEMIPUS PICATUS*. Little Pied Shrike.

This is No. 15 of Col. Tickell's paper on the birds of Borabhun and Dhulbhun (J. A. S. B. ii. p. 574). I procured a specimen of this species at Simla in 1866 in the flesh.

269. *VOLVOCIVORA MELANOSCHISTA*. Dark-grey Cuckoo-Shrike.

Procured by me on several occasions at Simla in 1866. I subjoin the dimensions of three specimens killed in June.

	Length.	Wing.	Tail.	Tarsus.	Bill from front.	Spread foot.	Extent.
	9·875	5	4·75	·875	·6875	....	14·75
<i>Adult</i> . . 10	4·875	4·75	·875	·625	1·25	14	
<i>Hornot.</i> 9·25	4·75	4·0625	·875	·625	1·25	13·25	

The presumed young of the year is conspicuously barred with white edgings to the feathers on the head and back, and on the underparts much the same, but with a slightly rufous tinge. The scapulars are tipped with light rufous; and a bar across the wing is of the same. The rectrices are tipped with white as in the adult. The bill, however, is lighter than in the old bird; the legs and claws leaden, with flesh-coloured soles. Irides brown, eyelid covered with short white feathers. Of the first bird, I note that it has the bill arched, somewhat corvine in general appearance, the bill and legs being black.

270. *GRAUCALUS MACÆL*. Large Cuckoo-Shrike.

Procured by me in the Maunbhoom district in 1864. It is there called "*Painsi*," according to my Bowrie shikaree; but whether this name is also current among other tribes in that district I am unable to say; to the best of my recollection I procured a specimen also at Moulmein in Burmah.

271. PERICROCOTUS SPECIOSUS. Large Minivet.

In my previous paper (Ibis, 1865, p. 419) for "Maknee" read "Maknoo"—a small hill village in the district of Ambe-kanuggur. In 1864 I procured specimens at Kashurghur in the same district.

273. PERICROCOTUS BREVIROSTRIS. Short-billed Minivet.

This species was particularly abundant at Simla in the hot weather of 1866, and in the cold weather it apparently migrates to as far as Umballah, in the plains; for Dr. Scott told me that he had frequently procured specimens there, as I myself did, in his garden, in November 1866. From his notes it would seem that this species leaves the plains for the hills about the end of February or the beginning of March, breeds in the hills in June, and returns to the plains at the beginning of the cold weather, in September or October. Some examples, however, were seen by Dr. Scott on August 29th, 1866; but these were probably exceptional stragglers. I subjoin dimensions of various specimens procured by me.

	Length.	Wing.	Tail.	Tarsus.	Bill from front.	Extent.
Zwagaben, { Oct. 18, 1865. }	♂. 7·875	3·625	3·375	·5625	·625	10·75
Umballah, { Jan. 18, 1866. }	♂. 7·75	3·75	4·25	·5625	·375	10·5
Mahasoo, { Oct. 1866. }	♀. 8	3·5	4·55	·5625	·5	10·25
Simla, { May 11, 1866. }	♀. 7·75	3·75	3·875	·625	·49	10·5

In the last the abdomen was pure white. On the 3rd of July at Simla, I had a fully fledged nestling sent to me from Kotegurh, probably shot and stuffed a few days previously. The head, neck, back, and upper wing-coverts were grey, with a whitish edge to each feather, giving the upper parts a barred appearance, the upper tail-coverts being bright yellow. A young male resembles the adult female, but with a few scarlet feathers beginning to appear among the yellow ones on the rump and among the primaries. It is evident then, first, that this bird breeds near Simla, and, secondly, that the male does not assume his scarlet garb in full until after his first moult.

Dr. Jerdon is somewhat in error when he speaks of the female's "spots on wings." They rather form a wing-band; and in the next line his statement, "the pair next the middle feathers slightly edged with yellow," resolves itself after careful comparison into—the outer tail-feathers with more or less yellow, and most so on the outermost pair of the lengthened ones. At least this seems to be the most accurate way of describing the plumage of this very handsome bird. I may also remark that the English name used by the Doctor is rather a misnomer, as this species has not a proportionally shorter bill than others. At Simla it goes by the popular name of the "Scarlet Cardinal."

276. *PERICROCOTUS PEREGRINUS*. Small Minivet.

On the 30th of November, 1865, at Barrackpore, I observed a large flock of this species, consisting of dull-breasted individuals, females and young of the year, I presume, which were carefully questing for insects in the bark and on the leaves of a large mango growing by the side of the main road to Calcutta. They were very tame, and allowed me to approach quite closely. One would occasionally cling to the bark of the trunk and pick off an insect. I saw but one scarlet-breasted male in this flock; and this was the only time that I have ever observed the species in Lower Bengal—although it was the common species about Umballah, where I procured several examples, the first on the 30th of October, 1866; but they were much more plentiful after an interval of a few days, since I find that on the 3rd of November I obtained three specimens, and on the 9th no less than six. The length of a male killed by me in Maunbhoom on the 2nd of January, 1865, is only 5·5 in.—much less than is stated by Dr. Jerdon.

278. *DICRURUS MACROCERCUS*. Common Drongo-Shrike.

I procured the nest of this bird in the Maunbhoom district, and forwarded two of its eggs to the Zoological Society (P. Z. S. 1864, p. 375). The species occurs also frequently about Umballah, where Dr. Scott recorded (*Ibis*, 1867, p. 136) a very peculiar circumstance with regard to it, which has, I believe, never been observed before. At Barrackpore, in the autumn of 1864 (*cf.* P. Z. S. 1865, pp. 692, 693), I found that this was

one of the birds that prey upon the winged *Termites* when the latter issue forth from the ground.

281. *DICRURUS CÆRULESCENS*. White-bellied Drongo.

I shot a specimen near the village of Maknoo in Maunbhoom, January 3rd, 1865; and I have since observed the species at Umballah, where it is rare. However, I procured an example in Dr. Scott's garden there, October 27th, 1866, of which I subjoin the dimensions:—Length 10·375; wing 4·875; tail 5·125; tarsus ·6875; spread foot 1·5; bill from front ·75, from gape 1·0625; extent 15 inches,—measurements which exceed those given by Dr. Jerdon. The irides were reddish-brown.

282. *CHAPTIA ÆNEA*. Bronzed Drongo.

At Tongwine, near Moulmein, September 23rd, 1865, I observed four or five of this species, near the *kyoungs*, or priests' residences, on the bare boughs of the highest trees, and found them rather wary. I, however, secured one, which was moulting and measured as follows:—Length 8·75; wing 4·5; tail 4·625; tarsus ·5625; bill from front ·75, breadth at base ·375 in.

284. *EDOLIUS PARADISEUS*. Large Racket-tailed Drongo.

This bird occurs frequently in Burmah; and I observed several examples hawking about, apparently after insects, of an evening at Thatone, north-west of Moulmein, in October 1865. The Burmese name for this species is "*Gknet-dau*;" and they consider that it is very unlucky to keep it in captivity, because whatever evil it speaks of a person, is supposed of a certainty to come true; and with regard to its peculiar tail they have an absurd but curious legend to the effect that once upon a time the *Gknet-dau* had learnt the notes of every bird that inhabits the jungles, excepting the coo of the Dove (*Turtur suratensis*), and, while on the ground one day, got so engrossed on hearing one in the tree above it, that in listening attentively to catch the note it inadvertently stood on the pointed top of the nest of a colony of *Termites*, which, of course alive to their own interests, ate off the whole of the long feathers of the tail, excepting their tips, which escaped by overhanging the nest, and thus the bird to this day has a great portion of its long rectrices without webs.

A specimen in the flesh killed by me at Zwagaben on the 20th of October, 1865, measured as follows:—Length 18·75; wing 6; tail 12·5; bill from front 1·125; tarsus ·9375 in. This species is essentially a forest-lover, frequenting wild and out-of-the-way spots, and it is but rarely seen in the vicinity of Karen villages. The irides are dark-brown, the bill black, the legs black with brown sides. I am in doubt whether lengthened rectrices are not wanting in the female.

288. *TCHITREA PARADISI*. Paradise-Flycatcher.

Since the time mentioned in my former note (Ibis, 1865, p. 420) I have observed several examples in the chestnut plumage in the trees which line the main road between Umballah and Kalka, in March 1866; and Dr. Scott told me that he had occasionally seen specimens in the immediate neighbourhood of Umballah itself. I procured specimens at Simla, and have frequently seen skins sent in to that station from Kotegurh, a distance of fifty miles further in the interior; so that it is probable that it extends for some distance in the low valleys towards the snowy range. The extreme length of this bird to the end of the middle or longest tail-feathers is from about 20 to 24 inches.

290. *MYIAGRA AZUREA*. Black-naped Blue Flycatcher.

A female specimen procured by me at Moulmein, 16th of September, 1865, had the following dimensions:—Length 6·25; wing 2·625; tail 2·75; tarsus ·625; bill from front ·5; extent 7·75 in. The irides of a very deep reddish-brown, the bill dark-bluish horny, and legs bluish-plumbeous*.

291. *LEUCOCERCA FUSCOVENTRIS*. White-throated Fantail.

Not uncommon about Umballah in October and November, 1866, my first specimen being procured there on the 29th of October.

292. *LEUCOCERCA ALBOFRONTATA*†. White-browed Fantail.

Also procured by me at Umballah, at the same time as the preceding, my first specimen being killed on the 30th of October, 1866; but it was apparently not so commonly distributed.

* Dr. Jerdon, in his description of this species, makes two statements in the same line as to the colour of its legs; the latter is correct.

† Potius, *L. aureola* (Vieill.) *vide* Blyth, Ibis, 1866, p. 370.

295. *CRYPTOLOPHA CINEREOCAPILLA*. Grey-headed Flycatcher.

The dimensions of a specimen procured by me in Maunbhoom, December 16th, 1864, are given below, together with those of two others killed May 10th and July 30th, 1866, at Simla, where the species is apparently not uncommon.

	Length.	Wing.	Tail.	Tarsus.	Bill from front.	Extent.
Maunbhoom .	4·6	2·125	2	·5	..	7
Simla	4·75	2·625	2·25	·5	·375	7·25
„	4·75	2·375	2·125	·4375	·375	6·75

In the second specimen the feet are of a dull orange-yellow, the irides black, with a slight white margin to the eyelid. In the specimen from Maunbhoom the legs were of a dark yellow, with dark greenish claws. The third specimen has the irides very dark brown, the legs orange, darker above, and the upper mandible dark, the lower light orange-yellow. A pair of these birds accompanied a flock of some twenty *Abrornis albosuperciliaris* into my garden, and this specimen was secured whilst preening itself on a peach-tree. *Cryptolopha* darts in and out between the boughs and is very quick on the wing, whilst *Abrornis*, on the contrary, carefully examines every leaf and twig, catching all the resident insects found at home, the former capturing all that take to fancied security in flight; and thus both are of infinite service to the gardener.

296. *HEMICHELIDON FULIGINOSA*. Sooty Flycatcher.

The description given by Dr. Jerdon being but brief, I will attempt one more full, from specimens procured at Simla, where the bird is not at all uncommon. The general colour is olive-brown, the feathers of the head darker in the middle, the primaries and secondaries slightly edged with rufous, the throat, breast, and flanks striated with pure white and ashy, edged with rufous; the abdomen and under tail-coverts pure white; the under wing-coverts and most of the inner webs of the primaries rufous; bill black above, and the tip of the lower mandible of the same colour, the rest being fleshy red. The irides and legs are black. I observed several on the 1st of May, 1866, at Annandale; they

frequented the tops of the dead boughs of some old deodars, whence they occasionally sallied out over a nearly dried-up brook at some height, returning to their perch, like *Meropidæ*, with the captured insect. I subjoin the dimensions of specimens in the flesh—two shot at Simla, and the third at Fagoo.

	Length.	Wing.	Tail.	Tarsus.	Bill from front.	Extent.
May 11, 1866....	4·875	2·875	1·875	·4375	·3125	9·5
May 13, 1866....	4·625	2·87	1·75	·4375	·3125	8·25
Aug. 4, 1866....	4·625	2·875	1·875	·4375	....	8·5

At the last-mentioned place they were abundant in open clearings, seated on a low stone wall, or the dead bough of a tree near the ground, from which they occasionally sallied forth to catch an insect, and then returned with it to their previous perch.

301. EUMYIAS MELANOPS. Verditer Flycatcher.

Although this bird is so common at Darjeeling, I found that at Simla in 1866 it was far from being so; but the few that are found at the latter station breed there about the end of April or the beginning of May, as I had a specimen of the fully fledged young of the year brought to me May 19th. An adult killed April 11th, 1866, measured as follows:—Length 5·875; wing 3; tail 2·5; tarsus ·6875; bill from front ·4375, breadth at base ·27; extent 8·75 inches. In Maunbhoom I procured specimens of this species both at Kasburghur and Ambekanuggur in 1864.

310. MUSCICAPULA SUPERCILIARIS. White-browed Blue Flycatcher.

Not at all uncommon about Simla, in gardens and forest-glades, and not at all shy. I discovered the nest of this species on the 10th of May at that station, with four young ones in it. It is a pretty little cup-shaped structure, composed of moss and hair, placed at the bottom of a small hole in an *Ilex*, at no great depth inside. The female is of a different colour from the male, being of a dull brown hue. I saw several specimens of both females and young of the year in Dr. Stoliczka's collections; but they were apparently not nearly so common in the vicinity of Simla as the blue-and-white males. I append

the measurements of four specimens killed in 1866, the first two the 12th of April, the last two, at Simla, 20th of June.

	Length.	Wing.	Tail.	Tarsus.	Bill from front.	From gape.	Extent.
	4·625	2·5	1·875	·5625	·375	....	7
	4·625	2·5	1·75	·5625	·375	....	7·125
♂.	4·625	2·45	1·7	·625	....	·5625	6·5
♂.	4·625	2·5	1·75	·5625	·375	·5625	6·75

312. MUSCICAPULA SAPPHIRA. Sapphire-headed Flycatcher.

The specimen before referred by me (Ibis, 1865, p. 422), though doubtfully, to this species was perhaps *Erythrosterna maculata*.

323. ERYTHROSTERNA LEUCURA. White-tailed Robin Flycatcher.

I shot a specimen of this species in Dr. Scott's garden at Umballah, on the 22nd of October, 1866—which, though I had previously shot many in the Maunbhoom district and Lower Bengal, was the first time that I had ever seen the male with a red throat and breast. The rufous phase seems to me rather the cold-weather dress than the nuptial plumage, as stated by Dr. Jerdon. Length 4·75; wing 2·75; tail 2; tarsus ·625; spread of foot ·9375; bill from front ·3125, from gape ·5625; extent 8 inches. At Barrackpore, in October 1864, I noted that I had only observed it from the 20th of that month; it is therefore migratory in Lower Bengal. The note is a harsh “zree, zree, zree,” uttered at short intervals; sometimes “thruk” when moving from one tree to another in company with other birds; “zree, tree, tut,” the last “tut” uttered on alighting. The bird suddenly spies an insect on the ground, hops down to it, and, standing there for one instant only, quickly picks it up and regains its perch.

325. ?ERYTHROSTERNA ACORNAUS. Brown Flycatcher.

A bird of this genus, apparently very near this species, was procured by me at Zwagaben, in the Tennasserim provinces of Burmah, October 18th, 1865. It was shot near the *poongye* or priests' houses, halfway up the hill, and was feeding on *Phyto-*

phagæ, one of which was partially protruding from his mouth, when picked up. Its general character was dark ashy, darker on the head, which was apparently slightly crested, the wings brownish, the secondaries slightly and the tertiaries more broadly edged with white, the upper tertials the same, forming a small wing-band. The tail was brown, tipped with white, the throat and breast of an ashy-white, and the rest of the underparts of a pure white colour. The bill was broad at the base, much depressed, and triangular, black above and on the tip of the lower mandible, the base of which and the gape were tinged with orange-colour. The legs were jet-black, the soles of the feet lighter in colour than the rest of the legs. There was also a conspicuous white ring round the eye. The dimensions were as follows:—Length 5; wing 2·75; tail 2; tarsus ·4375; bill from front ·4375, breadth at base 2·55; extent 7·75.

What, I may here ask, is the *Erythrostera rubropygia*? which name was appended by Mr. Blyth to a single female specimen in my Darjeeling collection of 1862. I have never been able to identify it satisfactorily.

BRACHYPTERYX *vel* CALLENE, sp.?

A bird procured by me at Zwagaben is probably referable to one or the other of these genera, and is apparently nearly allied to the *C. albiventris* recently described by Mr. Blanford (P. Z. S. 1867, p. 832). The following are the dimensions of my specimen:—Length 5·5; wing 2·95; tail 1·75; tarsus 1; bill from front 4·95; spread foot 1·25; extent 8·5 inches. The general colour above is olive-brown, with a slight tinge of rufous on the upper wing-coverts; the fourth quill of the wing is the longest, with the third nearly equal to it, the tail is slaty-blue and nearly square, the inner webs with more of a brownish-tinge; the upper tail-coverts are slaty-blue, the throat and breast white, with pencillings of brown, which increases towards the flanks, and under the wings; the abdomen and under tail-coverts pure white; the bill brown, legs fleshy. A brownish-white eyelid. It was apparently a bird of the year, and was found on the ground, and flew when disturbed into a small bush; it has strong Turdine affinities.

343. *MYIOPHONUS TEMMINCKI*. Yellow-billed Whistling Thrush.

Near Moulmein on September 19th, 1865, I observed one or two specimens of what I took to be this bird on the rocky sides of a hill called Damathat; and when at Simla in 1866, I procured several specimens, the dimensions of some of which I here place on record.

	Length.	Wing.	Tail.	Tarsus.	Bill from front.	Spread foot.	Extent.
♂ ?	13	6·75	5·625	2	1·1875	2·125	19
♀ ?	12·75	6·5	5·125	2	1·25	2·125	18

The species is apparently very abundant near Simla, judging from the large number of specimens brought in by my native hunters. I can confirm Herr von Pelzeln's account of the peculiar appearance of the young of this species (Ibis, 1868, pp. 312, 313).

PITTA CYANOPTERA, Temm.

This handsome species was procured by me in Burmah in August 1865, on an island in the Salween River, some distance above Moulmein. I procured two specimens, an adult and a young one. In the former the irides are dark-brown, the skin behind the eye lead-colour, the legs pinkish-fleshy, the bill brown-black. In the latter the gape and tip of the bill are crimson red, and the legs flesh-coloured.

351. *PETROCOSSYPHUS CYANEUS*, var. *AFFINIS*. Blue Rock-Thrush.

At Moulmein, on the 11th of October 1865, I shot an example of this bird as it came in the evening to roost in the veranda of a house, which thus seems to be a favourite lodging for the species; for the week before, at Thatone, I had observed an example come of an evening for the same purpose into the veranda of the house I was staying in there. Another specimen of this bird was shot by me near the top of Zwagaben. I observed one other on the ironwork of the pagoda at the top, but could not get a shot at it. I subjoin the dimensions of the Moulmein specimen. Length 9·25; wing 4·75; tail 3·625; tarsus 1·125; bill from front ·8125; expanse 14·5 inches.

523. *OREOCÆTES ERYTHROGASTER*. Chestnut-bellied Thrush.

When with Col. Tytler in 1866, 21st of June, at Simla, we came across a pair of this species on the top of Mount Jacko. It

is, as remarked by Mr. Blyth (Ibis, 1866, p. 374), essentially a forest-lover, and frequents the tops of the highest trees, from which, when disturbed, it utters a harsh scraping call, somewhat like that of the Mistletoe Thrush.

	Length.	Wing.	Tail.	Tarsus.	Bill from front.	Extent.
♂. Simla, June 21 ..	9·5	5	4·125	1·0625	·875	14
♂. Mahasoo, Sept. 29.	9·375	4·87	4	1·125	·6875	14·5
Simla, July 21 ..	9·25	4·625	3·875	1	·75	13

Of the last, a fully fledged young bird, the general appearance is mottled, each feather being light cinnamon edged with dark-brown; the upper tail-coverts are somewhat rufous, the wings and tail brown, the forehead and throat lighter than the rest. This is, I think, without doubt *Petrocincla castaneocollis*, Lesson (Rev. Zool. 1840, p. 166), as Dr. Jerdon has suggested with reserve (B. Ind. i. p. 514).

353. OREOCÆTES CINCLORHYNCHUS. Blue-headed Chat-Thrush.

Tolerably common at Simla, where I procured several specimens in 1866. The female deserves particular description. The upper parts are generally brown, except the upper tail-coverts, which are rufous, with a few feathers on the lower back of an olive-yellow, barred and tipped with black. The lower parts are white barred with dark brown, the throat and ear-coverts somewhat rufous; the under wing-coverts cinnamon-yellow, slightly barred; the thighs brown; the bill dark-brown, nearly black—the gape yellowish; legs fleshy leaden, their soles bright yellow.

The young male differs from the adults of both sexes. The head, neck, back, and upper wing-coverts are light cinnamon edged with black, giving them a speckled appearance, which is also found on the lower parts, but fainter, and on the belly the black edgings almost disappear. The rump and under wing-coverts are light cinnamon, of a little lighter hue on the under tail-coverts. There is a bright patch of blue on the shoulders; the outer webs of the primaries, and the tail, are blue, as in the adult male, the wing itself being nearly black, with a conspicuous band of white across the middle, and on the outer webs of

the secondaries; the bill and legs are fleshy, the latter with a tinge of plumbeous; the irides brown. In the adult the bill is black, and the legs and claws greenish-fleshy.

	Length.	Wing.	Tail.	Tarsus.	Bill from front.	From gape.	Spread foot.	Extent.
♂, June 7.	7.375	3.95	2.75	1	.75	....	....	11.5
♂, July 3.	7.625	3.875	2.75	.9375	.75	1.0625	1.437	11.5
♀, July 3.	7.25	3.87	2.625	.9375	.75	1	1.5	11.75
♂ juv.	7.125	3.875	2.625	.875	.625	1	1.5	11.5

These specimens were obtained at Simla. Some females are very nearly equal to the males in size; and I should say, as a rule, that there is not much difference in this respect between the adults of both sexes. As I have before mentioned (*Ibis*, 1867, p. 143), this species frequents a much lower zone than the preceding.

355. *GEOCICHLA CITRINA*. Orange-headed Ground-Thrush.

This bird is No. 34 of Col. Tickell's paper on the birds of Borabhun (*J. A. S. B.* ii. p. 577). I procured the first specimen that I had seen, at Ambekanuggur, in February 1865, and a second shortly afterwards at Baramussia. The species frequents thick bush-jungle, near the open, and was found also by me in damp ravines where there is plenty of bushes. The natives told me that its powers of song are great: the bird is apparently rare in the Maunbhoom district.

357. *TURDULUS WARDI*. Ward's Pied Blackbird.

Very abundant at Simla in 1866; and I can in consequence add a good deal to the information previously recorded with regard to this beautiful bird. Dr. Jerdon's description of the male is rather meagre; for he omits all mention of the colour of the underparts. In the characteristics he assigns to the genus, he says "Bill rather short" (*B. Ind.* i. p. 520), whereas in this species I have found it long and rather attenuated.

The following description is taken from a male bird in good plumage, procured at Simla, June 15th, 1866:—the throat and breast pure black to about half-an-inch below where the shoulder of the wing touches the body, at which point white suddenly meets the black, forming a distinct line across the breast; the flanks are black and white mixed, the feathers being white with a black bar across them; the thighs are dusky, the rest of the under-

parts, including the tail-coverts, are white; the feathers of the under tail-coverts, however, on closer examination show that their basal halves are black; and the white feathers on the abdomen are apparently the same; the bill is yellow, except the base of the ridge of the upper mandible, which is blackish; the legs and claws are dirty yellowish. An adult in moult or a young male changing to adult plumage was brought to me, June 30th, 1866, and deserves special description. The upper mandible considerably overlaps the lower, the bill is dirty yellow, darker at the base of the ridge of the upper mandible; the legs and claws are dirty chrome-yellow, lighter on the soles of the feet. The plumage of the head is partially brown, partially black; and therefore I am inclined to consider this a young male in change. The flanks are banded with dark brown, the remiges are brown, but the secondary and tertiary coverts are black. There is a broad white patch on the interior webs of the quills about their middle, forming a conspicuous white wing-band as seen from underneath; the under wing-coverts just below the shoulder (which is black) are white, followed by a broad edging of dark brown. This specimen was found near water, according to the statement of my native hunters. The next day a female and young, which were shot together, were brought in. The female is not unlike the English Song-Thrush in general appearance, spotted brown and white on the throat, breast, and flanks, but with rather more rufous on the throat. The belly and under tail-coverts white, the latter edged with brown on the exterior web, but not at the tip. It has a light brown supercilium, and all the upper parts of an olive-brown colour. The bill has the upper mandible brown, the lower dirty yellow, as are also the legs. The wing-band, seen from below, is light rufous. The secondary and tertial coverts, which in the male are tipped with white, are in the female of a light rufous colour.

The fully-fledged young, which is probably a young male, is like the female, but much darker on the upper parts. The edges of the wing-coverts are more conspicuously marked with rufous, and the markings on the throat and breast are altogether darker. The bill is as in the female; but the legs are of a light flesh-colour, with yellow soles. The irides are apparently reddish-

brown, and the wing-band from below as in the female. The dimensions of these four specimens are as follows :—

	Length.	Wing.	Tail.	Tarsus.	Bill from front.	From gape.	Spread foot.	Extent.
♂.	9	4·625	3·125	1	·875	....	....	12·75
♂ <i>juv.</i> ?	8·75	4·375	3·125	1	·9375	1·1875	1·625	....
♀.	8·5	4·375	3	1	·875	1·1875	1·625	13
<i>Juv.</i>	7	3·75	....	1	·75	1	1·625	10·75
♀.	8·75	4·5	3·125	1	·875	1·125	1·625	13·25

361. MERULA BOULBOUL. Grey-winged Blackbird.

Three examples, obtained at Simla in 1866, measured :—

	Length.	Wing.	Tail.	Tarsus.	Bill from front.	From gape.	Extent.
♂.	11·5	5·5	4·375	1·37	....	....	15
♂.	11·25	5·375	4·5	1·275	·875	1·25	15·25
♀.	11·125	5·375	4·375	1·3125	·875	1·25	15·5

The female of this species is of an uniform brown colour, with a yellow bill and yellow legs. The young male has the throat mottled with brown; and a few streaks of the same colour occur on the head. The feathers of the abdomen and under tail-coverts are edged with grey; but the rest of the plumage is as in the adult male, according to observations made by myself at Mahasoo on the 25th of September, 1866.

365. PLANETICUS ATRIGULARIS. Black-throated Thrush.

According to information given me by Dr. Scott, this species is tolerably abundant about Umballah in the cold weather, and several were procured there by him, although it did not occur while I was there.

368. TURDUS HODGSONI. Himalayan Mistletoe-Thrush.

I shot a specimen at Fagoo, near Simla, August 3rd, 1866. On the previous day I had noticed a Thrush on the road, and seen it feeding on the ground in a clearing in the forest. It was as large as, if not larger than, the English Mistletoe-Thrush, and when disturbed flew in the same undulating manner and settled again on the ground at a few hundred yards' distance from where I first put it up. My gun was at the time unfortunately behind with my servants; but the next day I visited the same spot, and secured a specimen, probably the individual seen the day before.

It was a bird of the year, and measured as follows:—Length 9·5; wing 5·125; tail 3·25; tarsus 1·25; spread foot 1·625; bill from front ·8125, from gape 1·1875; extent 15 inches. The species is apparently rare, as this was the only specimen that I procured.

371. *OREOCINCLA DAUMA*. Small-billed Mountain-Thrush.

The name of “Mountain-Thrush” cannot be very correctly applied to this species; for I have previously recorded it (*Ibis*, 1865, p. 423) from Maunbhoom, and I have killed an example in a garden, December 18th, 1866, at Morar, near Gwalior, both of which places are in the plains of India, and the latter far from any mountain-range. The Morar bird was very wary, feeding under the bushes in the garden, and apparently solitary; when disturbed it flew into a thick mango-tree, where I shot it. The dimensions were as follows:—Length 10·75; wing 5·625; tail 3·45; tarsus 1·25; spread foot 2·375; bill from front ·875, from gape 1·25; extent 17 inches. The irides were dark brown, the bill and legs pale flesh-colour, the former with a tinge of green on the lower mandible. The upper mandible was dark horny.

XXIII.—*A List of the Birds of Turkey*. By H. J. ELWES, F.Z.S., late Capt. Scots Fusilier Guards, and T. E. BUCKLEY, B.A., F.Z.S.

(Concluded from p. 201.)

? 197. *TETRAO UROGALLUS*, L.

We were told by various persons of a large bird found in the pine-forests of the Balkan mountains, which we think must be the Capercally, though we have no positive evidence as to its existence there. Its occurrence, however, in Spain in as low a latitude, of which there can be no doubt (*Ibis*, 1866, p. 383), would render our supposition less improbable than it might at first sight seem*.

* [It will be remembered that Temminck (*Man. d'Orn.* iv. p. 313) mentions, on the authority of M. Cantraine, the occurrence of “Wild Turkeys” in Dalmatia. Prof. Andreas Wagner (*Rep. Progr. Zool.* 1842, p. 85, Ray Soc.) explains the statement by reference to a paper by Dr.

198. *TETRAO TETRIX*, L.

The only locality we at present know of for this bird is the forest country about Vetova and Ishicklar in Bulgaria, not very far from Rustchuk. In the oak-woods about here the Black Grouse used to be common a few years ago, and several of the engineers who made the Varna railway have killed them; they have become, however, more scarce of late.

199. *CACCABIS GRÆCA*, Bp.

Common on the mountains of Macedonia, and extremely numerous on some of the Greek islands, but becoming scarce on the mainland of Greece, owing to the incessant shooting which goes on at all seasons of the year. On the islands of Imbros and Lemnos, off the entrance to the Dardanelles, the Greek Partridge is so abundant that we were assured by a well-known sportsman at Constantinople that fifty brace might be bagged by a good shot with ease, at the end of August; but the heat is then so great, that few would care to expose themselves to the sun except in the mornings and evenings. In Bulgaria we never saw or heard of this bird.

200. *PERDIX CINEREA*, Lath.

By far the commonest game-bird, both in Macedonia and Bulgaria. Very good bags are often made on the plains, as soon as the harvest is got in; and even the natives, who at present are armed with flint muskets five feet long, manage to slaughter a good many. Though the Turks, as a nation, care very little about sport, or any thing requiring exertion, yet villagers who are excellent pot-hunters and capital shots are sometimes found.

201. *COTURNIX COMMUNIS*, Bonn.

Arrives in April in immense flocks, and disperses all over the country to breed. A great many are killed on the shores of the Bosphorus during the spring and autumn migrations, though their capture is not carried on so systematically as in Italy.

Küster (Isis, 1842, pp. 611, 612), wherein it is said that *Otis tarda* was evidently the species meant. From what we have been told of the nature of the country, it would seem as likely to have been *Tetrao urogallus*. —ED.]

202. PHASIANUS COLCHICUS, L.

Exists in a wild state in many parts of Turkey, especially in Macedonia and the north of Albania. We found Pheasants chiefly in the marshy forests of the plains; but, owing to the extreme density of the brambles, they were very difficult to flush, and, when put up by the dogs, would sometimes fly into a tree. A good many are found in the coverts round the foot of Mount Olympus and the vale of Tempe; but they are becoming scarcer. There cannot be many in Roumelia; for when they were required for the Sultan's aviaries, he sent to Salonica to have them caught.

203. OTIS TARDA, L.

Not uncommon in many parts of Turkey, but, so far as we know, most numerous in the Dobrudscha. The Tartars who live here are very skilful in snaring and trapping Bustards, which they attract by means of stuffed females and other devices; and the species has diminished considerably during the last few years in consequence, though it is still common. A good rifle-shot would have no difficulty in shooting them from a cart; but the most killing way is to drive them in the snow like Partridges. The Great Bustard is said to be particularly numerous in a waterless and uninhabited part of Wallachia, which corresponds to the Dobrudscha on the other side of the river.

204. OTIS TETRAX, L.

Observed once or twice in Macedonia, but not common there during the winter. In the Dobrudscha they are especially numerous; and the manner of shooting them has been capitally described by Mr. Hudleston (*Ibis*, 1861, pp. 369, 370). Like the Great Bustard they are decreasing under the influence of cultivation, which, since the immigration of Tartars from the Crimea, is spreading rapidly. Their number is largely increased in April by flocks which arrive from the south to breed; but unless driven away by deep snow, a few always remain. The Little Bustard in this country seems to prefer land which, having been once broken up, has been left fallow, and soon becomes covered with a bushy weed, affording good shelter from the numerous Eagles which are always hunting about.

205. *GLAREOLA PRATINCOLA* (L.).

Never seen by us, as it does not arrive until May, when it is very common in the Dobrudscha, and breeds in colonies on the dry ground, very often in newly-sown millet-fields.

206. *GLAREOLA NORDMANNI*, Fischer. (Ibis, 1868, pl. viii.)

We obtained one specimen from Mr. Robson, which had been shot near the Bosphorus by him.

207. *ŒDICNEMUS CREPITANS*, Temm.

One was shot near Shitangik at the end of April, the only time the bird was seen by either of us. It is probably a summer visitor, as the climate of Bulgaria, notwithstanding its southern latitude, is very cold in winter, and many birds which are tolerably hardy do not remain during that season. Indeed, as a rule, all the birds which migrate southward in England, do so here also.

208. *CHARADRIUS PLUVIALIS*, L.

Common in Macedonia, and found occasionally both in Epirus and the east of Turkey.

209. *SQUATAROLA HELVETICA* (L.).

Found in Epirus by Lord Lilford.

210. *ÆGIALITIS HIATICULA* (L.).

Specimens were in Mr. Robson's collection.

211. *ÆGIALITIS CANTIANUS* (Lath.).

Very common on the Bulgarian coast, where we found a nest of two eggs on the 8th of April.

212. *ÆGIALITIS CURONICUS* (Gmel.).

A few frequent the streams of Bulgaria, where they breed. It is also found on the Bosphorus.

213. *VANELLUS CRISTATUS*, Bechst.

Abundant on the mainland and islands, according to Lord Lilford. Observed by us in Eubæa, near Chalcis.

214. *HÆMATOPUS OSTRALÉGUS*, L.

Seen in the Gulf of Salonica, but apparently not common.

215. *STREPSILAS INTERPRES* (L.).

Seen occasionally on the coast.

216. NUMENIUS ARQUATA (L.).

A few observed in Macedonia, but nowhere else.

217. NUMENIUS PHÆOPUS (L.).

A small Curlew, probably of this species, was common in Macedonia, but we never obtained a specimen. It occurs in Epirus and on the Bosphorus.

218. NUMENIUS TENUIROSTRIS, Vieill.

Small flocks of this species were often seen feeding on the dry pastures of the Dobrudscha, at some distance from the coast. Their food consisted of a small *Helix*, very like that which forms the favourite food of the Curlew in the Hebrides.

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| 219. LIMOSA MELANURA (L.). | } Found in Epirus by Lord Lilford. |
| 220. LIMOSA LAPPONICA (L.). | |

221. SCOLOPAX RUSTICOLA, L.

The winter of 1868–69 was a bad one for Woodcocks, as they were mostly driven away by the deep snow which lay on the mountains; we never found any number of them; but in some seasons capital shooting is to be had in Thessaly and Macedonia. Further inland the Woodcock is not so numerous; and apparently they do not breed in the country.

222. GALLINAGO MAJOR, Gmel.

One specimen only was shot, on a wooded hill in Bulgaria, where we were looking for Vulture's nests. This was probably a straggler; but we have no doubt it is a regular winter visitor.

223. GALLINAGO MEDIA, Leach.
Common.

224. GALLINAGO GALLINULA, L.

Tolerably common in some of the marshes.

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| 225. CALIDRIS ARENARIA (L.). | } Seen on the coast near Kus-tendji. |
| 226. TRINGA CANUTUS, L. | |

227. TRINGA SUBARQUATA, Gldenst.

Found at Corfu by Lord Lilford.

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| 228. TRINGA MINUTA, Leisler. | } Shot on the Bosphorus by Mr. Robson. |
| 229. TRINGA PLATYRHYNCHA, Temm. | |

230. *TRINGA ALPINA*, L.

Common on the coast of the Black Sea.

231. *TOTANUS HYPOLEUCUS* (L.).

Not uncommon on the Bosphorus.

232. *TOTANUS OCHROPUS* (L.).

The commonest Sandpiper in the marshes and rivers of Macedonia.

233. *TOTANUS CALIDRIS* (L.).

Common.

234. *TOTANUS GLOTTIS* (L.).

We observed the Greenshank several times, but never more than two or three together.

235. *TOTANUS STAGNATILIS*, Bechst.

Found at Corfu by Lord Lilford.

236. *PHALAROPUS HYPERBOREUS* (L.).

One specimen in Mr. Robson's collection was killed by him on the Bosphorus.

237. *RECURVIROSTRA AVOCETTA*, L.

We never observed the Avocet in Macedonia; but Col. Drummond-Hay found it there, and Mr. A. Cullen informs us that it is not uncommon near Kustendji, where it breeds.

238. *HIMANTOPUS CANDIDUS*, Bonn.

The Stilt breeds near Kustendji, in the salt marshes; we saw a few there in the beginning of April; but none of the waders had yet commenced breeding.

239. *FULICA ATRA*, L.

Found in Epirus by Lord Lilford.

240. *GALLINULA CHLOROPUS* (L.).

Seen occasionally in Macedonia.

241. *RALLUS AQUATICUS*, L.

Common.

242. *CREX PORZANA*, L. }

243. *CREX MINUTUS* (Pall.). }

Found near Constantinople by Mr. Robson, but not abundant.

244. *CREX PRATENSIS*, Bechst.

Found in Epirus and near Constantinople.

245. *GRUS CINEREA*, Bechst.

We found the Crane tolerably numerous in some of the marshes, and were told they breed in Macedonia, which seems very likely, as the ground was of almost exactly the same nature as the places where they breed in Lapland, and the Crane has been found breeding in Spain quite as far south as this. We found Crane-steak capital eating when well-cooked, though not quite so "gamy" as Bustard, which is a first-rate bird for the table.

246. *GRUS LEUCOGERANUS*, Pall.

Col. Drummond-Hay observed a flock of these magnificent birds in Macedonia; but we are not aware of any other instance of their occurrence.

247. *GRUS VIRGO* (L.).

Very numerous in the Dobrudscha in summer, arriving about the middle of April in large flocks*.

248. *ARDEA CINEREA*, L.

Fairly common in all parts of the country where there are marshes.

249. *ARDEA PURPUREA*, L.

Common in Bulgaria, especially about the lakes and backwaters of the Danube.

250. *ARDEA ALBA*, L.

Very common in the marshes of Macedonia, where we have seen as many as fourteen together. The great size and snowy plumage of this White Heron make it a very conspicuous object among the tall reeds, or when flapping slowly along above them. We cannot say whether it breeds here; but in Bulgaria, though not so numerous as in Macedonia, it certainly does. An old male, which was shot in February, had the long plumes of the back, which fall off in summer, fully developed.

* A good account of its breeding-habits, by Mr. A. Cullen, who has had much experience in the ornithology of that district, will be found in the "Field" of Sept. 11, 1869.

251. *ARDEA GARZETTA*, L.

Arrives in large numbers on the Danube about the first week in May, and breeds in colonies in company with the Squacco- and Purple Herons. One of the large islands below Rustchuk is a great breeding-place for Herons; but they had not arrived on the 2nd of May. In a dense thicket of willows, at this time of the year four feet deep in water, there are hundreds of nests; and a friend who visited the same spot a month later found them all tenanted by three or four different species of Herons.

252. *ARDEA RALLOIDES*, Scop.

Arrives about the same time as the last, and breeds in company with it on the Danube.

253. *ARDEA MINUTA*, L.

Common in Bulgaria, where it is a summer visitor, and breeds in colonies with the last two species.

254. *ARDEA NYCTICORAX*, L.

Not uncommon in Bulgaria, where we first observed it on March 31st.

255. *BOTAURUS STELLARIS* (L.).

Found near Constantinople, and not uncommon on the Danube.

256. *PLATALEA LEUCORODIA*, L.

Found in Epirus by Lord Lilford.

257. *CICONIA ALBA*, Bechst.

Very common all over the country, arriving in the beginning of April. There is hardly a village or farm in Turkey without its pair of Storks; and in some places nearly every house has a nest on the roof. As the Stork is protected and regarded as a bird of good omen by Turks, Greeks, and Bulgarians alike, it is very tame and familiar, and always takes up its quarters close to a house. The eggs are laid at the end of April, and are sat upon by male and female in turn.

258. *CICONIA NIGRA*.

The Black Stork is by no means numerous; but a pair is found here and there in most parts of Bulgaria. It arrives at

the same time as the White Stork, and is just as shy and solitary as the other is sociable. The nest is usually built in a rock in a lonely situation, and is used for many consecutive years. We saw the Black Stork in the Pravidy valley, and near Babadagh, where a pair were making their nest in a low rock on the edge of the forest.

+ 259. *FALCINELLUS IGNEUS* (Gmel.).

Common in summer, especially about the lagoons and marshes of the Danube. The first flock we saw was on the 18th of April, when we shot one near Pravidy.

260. *PELECANUS CRISPUS*, Bruch.

Common in Macedonia, where we saw it in the Gulf of Salonica and about the mouth of the Vardar. We were told that Pelicans bred in the great marsh of Janitza, which is quite impenetrable, except in one or two narrow channels. On the 11th of April we visited a lagoon which runs back from the Danube three miles above Rassova, whither a great number of Pelicans resort to breed. We had much trouble in getting a boat, as the Circassians who lived there would not allow us to go in theirs; but at last we brought a dug-out canoe in a cart from Rassova, and launched her on the lake, which was surrounded by a deep bed of tall reeds. We paddled up to the top of it, disturbing numbers of Geese, Grebes, and Ducks, and came at last to the breeding-place of the Pelicans. The nest consists of a shallow depression in a large strong platform formed by reeds broken down and heaped together in the water; and on this great heap of decaying matter the eggs were laid. Many of the nests contained two or three; but all of them were quite fresh, and in some instances covered with bloody marks, as if they had cost a severe effort to lay. The old birds, when disturbed by our approach, flapped off heavily and began soaring about above us. It is wonderful to see the ease and grace with which they fly when once fairly on the wing, mounting up with hardly a motion of the wings until almost out of sight, and soaring round and round like Vultures.

261. *PELECANUS ONOCROTALUS*, L.

Found in Epirus by Lord Lilford, and also on the sea of Marmora by Mr. Robson.

+262. *PHALACROCORAX CARBO* (L.).

Very numerous on the Bosphorus and Sea of Marmora, where it breeds; also abundant on the Danube and Vardar rivers.

263. *PHALACROCORAX GRACULUS* (L.).

Found by Lord Lilford on the coast of Epirus.

264. *PHALACROCORAX PYGMEUS* (Pall.).

Common in Macedonia, where it frequents the inland marshes, and also found on the Danube, where it breeds in large colonies on the willow and poplar-covered islands.

+ 265. *PUFFINUS CINEREUS* (Kuhl.).

Found on the coast of Epirus by Lord Lilford, and on the Bosphorus by Mr. Robson, who states that it breeds on the islands in the sea of Marmora.

+ 266. *PUFFINUS YELKOUAN* (Acerbi).

Common on the Black Sea and Sea of Marmora, and, as we believe, the commonest species of Shearwater found on the Bosphorus. It is very difficult to account for these flocks, so well known to all visitors to Constantinople as the "Ames damnées," which are constantly passing and repassing at all hours of the day and at all seasons of the year. It is evidently no regular migration, as the numbers going in each direction are about the same; and as they are rarely seen except in the Bosphorus and Dardanelles. They are supposed by the natives to disappear under water as soon as they reach the open sea.

+267. *PROCELLARIA PELAGICA*, L.

Found on the coast of Epirus by Lord Lilford.

268. *LARUS FUSCUS*, L.

Seen several times on the Black Sea, but not very numerous.

269. *LARUS MICHAHELLESI*, Bruch.

Common on the Black Sea and the Bosphorus. We sometimes saw these Herring-Gulls feeding on the cultivated land in Macedonia.

270. *LARUS CANUS*, L.

We did not identify this species by specimens, but have little doubt we saw it both on the Black Sea and the Gulf of Volo.

+ 271. *LARUS MINUTUS*, Pall.

Very numerous in Greece and Macedonia in February, and in Bulgaria in April (*Ibis*, 1859, pp. 362, 363). The Little Gull frequents marshes and lakes, hawking in the manner of a Swallow for insects, which constitute its chief food. We could not make out where they went to at night, as they all disappeared about sunset, probably going off to the coast to roost. An instance of the breeding of this species at Kustendji has been recorded by Dr. Cullen (*Ibis*, 1867, p. 248).

272. *LARUS GELASTES*, Licht.

We shot this species in the Gulf of Volo, and believe it is common in the Levant.

273. *LARUS MELANOCEPHALUS*, Natterer.

Common both in the Black Sea and the Levant, where it remains summer and winter. This Gull may always be distinguished by the black tip to its short and thick bright crimson bill. The primaries in the adult are not tipped with black.

274. *LARUS RIDIBUNDUS*, L.

We shot an immature specimen of this Gull in the Gulf of Volo, but cannot say whether it is common or not.

275. *LARUS AUDOUINI*, Payraudeau.

Found by Lord Lilford on the coast of Epirus.

— 276. *STERNA CASPIA*, L.

Found by Lord Lilford on the Albanian coast; and it breeds in the marshes of the Dobrudscha.

+ 277. *STERNA ANGLICA*, Montagu.

Common in summer on the coast of Albania, and has been shot by Mr. Robson.

278. *STERNA CANTIACA*, Gmel.

Common on the coast of the Black Sea in summer, and breeds near Kustendji.

+ 279. *STERNA HIRUNDO*, L.

Shot by Mr. Robson near Constantinople.

280. STERNA MINUTA, L.

Common on the coast of the Black Sea, and breeds in the Dobrudscha.

281. STERNA FISSIPES, L.

Very abundant in May on the Danube as far up as Belgrade.

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| 282. STERNA LEUCOPTERA, Schinz. | } Found in Epirus by
Lord Lilford. |
| 283. STERNA HYBRIDA, Pall. | |

284. CYGNUS OLOR (Gmel.).

The Mute Swan is found in a wild state in some parts of Turkey in summer and winter. The Gulf of Salonica was full of Swans when we arrived there; and the Governor, who is a great sportsman, invited us to join a battue, which was attended by several boats from the town. The procession was headed by three large men-of-war's boats, containing the chief dignitaries, with their rifles; and etiquette was carried to such an extent that instead of advancing in line, they kept in the order of their precedence. The Swans, which might easily have been surrounded, naturally took advantage of this; and a great expenditure of ammunition at long ranges only resulted in the capture of two Swans, though there must have been a thousand in the flock. Whoopers, as well as Mute Swans, were among them; but we did not identify Bewick's Swan. Swans which we believe to be of this species (*C. olor*) were breeding on the Upper Devna lake, near Varna; and a Wallachian shepherd brought us a nest of eight eggs, which he had taken on a lagoon near Rassova.

285. CYGNUS FERUS, Leach.

A winter visitor to Turkey, and tolerably plentiful in suitable localities. We shot one out of a flock near Kustendji on April 13th.

286. CYGNUS IMMUTABILIS, Yarrell.

Found in Epirus by Lord Lilford.

287. ANSER SEGETUM (Gmel.).

Not uncommon, but not so numerous as the following species.

288. *ANSER FERUS* (Gmel.)

Plentiful in Macedonia, and not uncommon in Bulgaria, where it breeds.

289. *ANSER ALBIFRONS* (Gmel.).

Occasionally found in winter.

290. *BERNICLA RUFICOLLIS* (Gmel.).

Col. Drummond-Hay says that he once saw this species in Macedonia.

291. *TADORNA VULPANSER*, Fleming.

Not uncommon near Kustendji, but by no means so plentiful as the Ruddy Shell-drake.

+ 292. *TADORNA RUTILA* (Pall.).

Very common in the Dobrudscha, though we did not see it anywhere else. In its habits it resembles the Common Shell-drake, but is more fond of fresh water and of inland ranges of rocks, whither it resorts in the breeding-season. The nest is very difficult to find, as it is always in a hole, sometimes in the middle of a corn-field, and the male bird keeps watch near by to call the female off her eggs when any one approaches.

We got a nest near Kustendji containing one egg, which is exactly like that of the Common Shell-drake; and the young are marked with black and white in the same manner. The Ruddy Shell-drake is very wary, and utters a harsh metallic cry when disturbed, from which it is called "Angout" by the Turks.

293. *SPATULA CLYPEATA* (L.).

One of the commonest Ducks in winter, and probably remains to breed.

294. *ANAS PENELOPE*, L.

About the commonest Duck next to the Mallard, but we believe it is only a winter visitor.

295. *ANAS BOSCHAS*, L.

Abundant in all parts of Turkey.

296. *ANAS STREPERA*, L.

A common Duck in Macedonia, where we have every reason to believe it breeds.

297. *ANAS ACUTA*, L.

This most graceful and handsome of Ducks was abundant both in Macedonia and Bulgaria, and remained in the country till the end of April.

298. *QUERQUEDULA ANGUSTIROSTRIS*, Ménétries.

Found rarely in Albania by Lord Lilford.

+ 299. *QUERQUEDULA CRECCA* (L.).

Very numerous, particularly in the great marsh of Janitza.

300. *QUERQUEDULA CIRCIA* (L.).

Most plentiful in Bulgaria, where it seems to take the place of the Teal to a great extent, and remains to breed.

301. *BRANTA RUFINA*, Pall.

Not uncommon in some parts of the country, and said by Mr. A. Cullen to breed in the Dobrudscha. We shot a female on the Inkermann river in March.

302. *FULIGULA CRISTATA* (Leach). } Not uncommon in Ma-
303. *FULIGULA MARILA* (L.). } cedonia.

304. *FULIGULA NYROCA* (Güldenstädt).

Not uncommon, and probably breeds.

305. *FULIGULA FERINA* (L.). } Common, but not so nu-
306. *CLANGULA GLAUCION* (L.). } merous as the fresh-
water Ducks.

307. *ÆDEmia NIGRA* (L.).

Seen off the coast of Albania by Lord Lilford.

308. *ERISMATURA LEUCOCEPHALA* (Scop.).

We obtained a female of this species, shot by Mr. Robson on the Bosphorus, where, he says, it is rare. Mr. A. Cullen, however, assures us that it breeds in the marshes about the mouths of the Danube; and Lord Lilford found it common in Albania.

309. *MERGUS MERGANSER*, L.

Not uncommon, but found occasionally on the Bosphorus.

310. *MERGUS SERRATOR*, L.

Not uncommon on the coast in winter.

+311. *MERGUS ALBELLUS*, L.

Common in Macedonia, where it frequents the inland waters and deep still streams which intersect the marshes. We never saw any adult males; and both Lord Lilford and Col. Drummond-Hay make the same remark.

312. *PODICEPS CRISTATUS* (L.).

Very common on the coast in winter, and on the lakes in summer. Large quantities of skins are collected by the Greek "sportsmen" in the seaports, who sell them for exportation to France.

313. *PODICEPS GRISEIGENA* (Bodd.).

Not uncommon on the Black Sea in winter; we shot them in the harbour of Sevastopol.

314. *PODICEPS NIGRICOLLIS* (Gmel.).

The most numerous of its family on the Turkish coasts.

315. *PODICEPS AURITUS*, L.

Found in Epirus by Lord Lilford.

316. *PODICEPS MINOR* (L.).

Common in winter.

+317. *COLYMBUS GLACIALIS*, L.

} Found in winter by

+318. *COLYMBUS SEPTENTRIONALIS*, L.

} Lord Lilford on the
coasts of Epirus.

*** We have been kindly reminded by Dr. Hartlaub that our contributors, while enumerating at the beginning of this paper (p. 60, *note*) the various publications on Turkish ornithology known to them, have omitted mentioning an article by Dr. Finsch in the 'Journal für Ornithologie' (1859, pp. 378-387), "Beiträge zur ornithologischen Fauna von Bulgarien, mit besonderer Berücksichtigung des Balkans." One hundred and seventy-eight species are therein included, whereof five, viz. *Sylvia philomela*, Bechst., *S. suecica* (L.), *S. nisoria*, Bechst., *S. palustris*, Bechst., and *Tringa temmincki*, Leisl., are not noticed in the present paper.—ED.

XXIV.—On the Ornithology of Hainan.

By ROBERT SWINHOE, F.Z.S. &c.*

(Plate X.)

[Concluded from p. 256.]

77? *ORIOLOUS CHINENSIS*, Linn.

I introduce this Oriole into my list on the authority of Père Michel Chagot, the French priest, who resides at Lingshanshe, near the capital city. To this gentleman, Monsgr. Guillemain, the French bishop at Canton, had given me a letter of introduction. I found him in Chinese queue and costume, living in a wretched hovel, part of a small farm-house in a poor village about ten miles from Kiungchowfoo. He had been seven years in the island without leaving it, and had the cure of the western division of the north of the island, while another Frenchman had charge of the eastern division. The two met once in three months. The mission once had chapels in the city; but they had long since been seized; and the priests driven away. M. Chagot did his best to be hospitable; but I must confess that notwithstanding all his efforts, his board and his quarters showed small cheer. The life of a priest in Hainan is not an enviable one. After thus introducing my informant I will tell what he told me about the Oriole. He said that in the summer one of their commonest birds was a yellow bird about the size of a Thrush. This, I should think, was pretty certain to be the species that summers in China. We did not leave Hainan till the 4th of April; and up to that date there were no signs of the Oriole.

78. *PSAROPHOLUS ARDENS*, Swinhoe (Ibis, 1862, p. 363, pl. xiii.), *var. NIGELLICAUDA*.

* I find I have wrongly referred (*suprà*, p. 88) the small horned Owl of Hainan to *Ephialtes lettia* (Hodgs.). It is more nearly related to *E. griseus*, Jerd., from which, however, it differs in its proportions, by its much longer tarsus and longer toes, its much deeper and richer colouring, the want of the white spot on the underneck, and in having its tarsal feathers reddish brown barred and mottled with dark brown. I will distinguish it as *E. UMBRATILIS*.

On the 20th February, at Taipingsze (Central Hainan), I spied a solitary male Red Oriole, and, after much chasing from one wood to another, at last secured it. On taking it into my hand, from its blackened tail I thought I had got a new species. Its iris was yellowish cream-colour. A few days later, on my return to the same place, I was attracted by a bird singing to himself in loud broken notes, hidden in a forked branch of a high tree. I watched till I could see him, and brought down a young male. I saw a second red male in the jungle at Yulin-kan (South Hainan).

My specimens are shorter in the wing and longer in the tail than the Formosan bird; and in the full-plumaged bird the black of the neck appears to extend less far down the breast.

Adult male. Length of wing, 5·7; tail, of 12 slightly graduated feathers, 4·125. Plumage as in *P. ardens* of Formosa, except as regards the tail, which, instead of being entirely crimson, has black shafts to the feathers, the two middle ones being washed with black, and the rest with their outer webs for the most part black.

Young male. Length of wing, 5·6; tail, 4·125. Head and tibiæ blackish brown. Back brownish-red; scapulars, wings, sides of breast and belly, and axillaries brown. Throat, breast, and belly white, with long blackish-brown spots. Rump, vent, and a new feather or two on the breast crimson. Tail pale crimson; the two middle feathers entirely washed with brown, the rest only on their outer webs; shafts of feathers black.

I have a more advanced male from Formosa, with a black head and crimson back, but still retaining the spots of the under parts, in which the tail is more blackened than in the young Hainan specimen. But all the Formosan birds in as mature plumage as the Hainan adult have purely crimson tails. In the Formosan bird the black disappears, in the Hainan bird it intensifies, with age. •

79. *COPSYCHUS SAULARIS* (Linn.).

Common about villages in the flat open country of North and Western Hainan. My specimens agree with the bird that is found throughout China south of the Yangtsze, and with skins

from India. A skin from Java, sent me by Dr. Schlegel, and marked *C. saularis*, with *C. mindanensis* as a synonym, is about the same size, but has stronger legs and feet, and dusky tibiae, with black axillaries. Another, from Mr. Blyth, from Malacca, marked *C. mindanensis*, is close to our bird in proportions, but has the black feathers of the axillaries fringed with white, whilst in *C. saularis* they are pure white. Considering that the true *C. saularis* extends from India to China unchanged, it strikes me that both the Malacca and Java forms may claim specific distinction. A Hainan male measures—wing 4 inches, tail 3·75; a female—wing 3·7, tail 3·635.

80. *CITTACINCLA MACRURA* (Gmel.), *var. MINOR*.

In the woods of Central Hainan, and in the jungles of the south, "*Shamas*" were often seen and heard, chasing one another about and singing defiantly. There was much sweetness and variety in their song. In habits *Cittacincla* bears the same relation to a *Copsychus* that a Nightingale does to a Redbreast. I have three males from Hainan; they agree with a bird from the Tenasserim sent by Mr. Blyth, but are much smaller than the typical Indian bird. They are in length about 9·5 in., wing 3·5, longest tail of the three skins 5·8. A Javan specimen from Dr. Schlegel is of the size of our bird, but has a much longer and broader tail. The "*Shama*" is called in the 'Gazetteer' "*Pih-shay*" or "*Hundred Tongues*":—"It begins to sing in spring; it can roll its tongue in imitation of the sounds of a hundred birds."

81. *PRATICOLA INDICA*, Blyth.

Seen about the fields near Kiungchow city early in February.

82. *RUTICILLA AUROREA* (Pall.).

About the gardens of the capital city in February.

83? *CALAMOHERPE FUMIGATA*, Swinhoe, P. Z. S. 1863, p. 293.

On the 27th February, on my journey outward, I ran into a wood at the foot of a hill, and was attracted at once by the sweet song of some Warbler hidden in the bushes. I watched awhile for him. He flew out and perched for a second on the

stump of a tree, stooping and throwing up his tail. In another second he was away, and I lost him. He looked very Nightingale-like, and more like this species than any other I am acquainted with.

84. *CALAMOHERPE CANTURIANS* (Swinhoe, Ibis, 1860, p. 52).

85. *CALAMOHERPE MINUTA* (Swinhoe, Ibis, 1860, p. 52).

Both these were frequently seen and heard in February about the gardens and villages near Kiungchowfoo.

86. *PRINIA SONITANS*, Swinhoe, Ibis, 1860, p. 50.

Seen about the gardens at Kiungchow city, and at Nychow (S. Hainan). It also occurred in the Luichow Peninsula.

87. *DRYMÆCA EXTENSICAUDA*, Swinhoe, Ibis, 1860, p. 50.

Common amongst the tall grasses. My single specimen is similar to some of the Amoy ones.

I got the Tailor-bird (*Orthotomus phyllorhaphus*) in Naochow Island, but never saw or heard it in Hainan.

88. *CISTICOLA SCHÆNICOLA*, Bonap.

Occurred on the grassy hills. I have two specimens.

89. *PHYLLOPNEUSTE FUSCATA* (Blyth).

Often met with in Hainan. I also saw it in the Luichow Peninsula.

90. *PHYLLOPNEUSTE PLUMBEITARSUS* (Swinhoe, Ibis, 1861, p. 330).

Willow-Wrens were often seen on the west coast of Hainan towards the end of March. Both my specimens are of this species.

91. *REGULOIDES SUPERCILIOSUS* (Gm.).

Common in February. I brought away one specimen.

92. *REGULOIDES PROREGULUS* (Pall.).

I saw a few in the gardens about the capital city in February.

93. *MOTACILLA FRANCISI*, Swinhoe, P. Z. S., 24 Feb. 1870.

I shot two Wagtails in Hainan similar to our ordinary white-faced Chinese Wagtail, but with black on the ear-coverts. The birds were not fully developed, and I should have had

merely to note the peculiarity and pass on; but more recently, in my trip to Szechuen, I procured a male in full summer plumage of evidently the same species. I give a note of its characters:—Length of wing 3·55 in., of tail 3·7, of tarsus ·93. General colour the same as in *M. felix*. Its main difference lies in the black being more advanced towards the forehead in line with the front corner of the eye, then stretching back, leaving a white eyebrow, and advancing at a sharp angle over the ear-coverts to the rictus of the bill—an intervening border between it and the eye, and the throat, remaining white. The face is marked much as in the second figure of the Grey-backed *M. personata*, in Mr. Gould's 'Birds of Asia.' The older Hainan bird has a long white blotch of white on the inner web of the third outer rectrix, which is wanting in the younger and in the Szechuen bird. I believe the Szechuen and the Hainan birds to be of the same species.

94. *MOTACILLA OCULARIS*, Swinhoe, P. Z. S. 1863, p. 275.

This Grey-backed Pied Wagtail, which occurs in China from Canton to Pekin, appears also to be tolerably common in Hainan. I have three skins from that island.

95. *CALOBATES BOARULA* (Temm.).

Not common. I shot one specimen.

96. *BUDYTES TAIVANUS*; *B. flavus* (L.), var. *rayi*, Swinhoe, Ibis, 1863.

I shot two out of a party of Yellow Wagtails at Heongpoo (W. Hainan) on the 26th of March. They are assuming the yellow under dress, their heads are still dull olive tinged with green, with the yellow eyebrow distinctly marked. They are the same as the Formosan bird, which I have sometimes procured at Amoy. This species is to be distinguished from *B. rayi* by its dark olive lores and ear-coverts, and duller plumage.

97. *BUDYTES CINEREOCAPILLUS*, Savi.

This I shot on West Island (S. Hainan) on the 15th March, in full summer plumage. Head deep grey, with a black line from rictus to ear-coverts; a small white spot in front of the eye; chin and base of lower mandible white, underparts fine

bright yellow. I have a specimen from Amoy, and another from Tientsin.

98. *PIPASTES AGILIS* (Sykes).

Frequents groves. I found it at most of the places we visited. I presume it is only a winter visitant here, as in Southern China.

99. *CORYDALLA RICHARDI* (Vieill.).

Common. I have two, which are moulting into a rich ochreous plumage, and seem to be the smaller race referred to by me in my "Catalogue of the Birds of China" (P. Z. S. 1863, pp. 272, 273).

100. ? *CORYDALLA RUFULA* (Vieill.).

On the banks of the Kiungchow River I saw with the former a smaller and more active species, of the same colour. This I take to have been *C. rufula*; but, unfortunately, I could not spare time to procure a specimen.

101. *ANTHUS CERVINUS* (Pall.).

Often met with in small parties. On the 23d of February I got one in winter plumage, and on the 26th of March I shot two, the first with the face only rufous, the second in nearly full summer-dress, the underparts being pinkish fawn-colour, with only a few streaks on the flanks.

102. *HERPORNIS TYRANNULUS*, sp. nov. (Plate X.)

In Central Hainan I noticed this remarkable little bird on several occasions. They went about the high trees of the forest in small parties, very lively in their movements, and hanging about the twigs in all attitudes, hunting for insects just like Titmice, raising their crests the while, fighting with one another, and uttering loud querulous notes. In death they look *Ixine*, but in life they are decidedly *Parine*. I have two specimens from Hainan which agree with Formosan examples. They closely resemble *H. xantholeuca*, Hodgs., of Nepal, but differ in having the green of the upper parts tinged with a brighter yellow, and in the bill being smaller. Upper parts yellowish olive-green, brighter on the back and rump. Coronal feathers long and broad, with blackish shafts. Lore, circle of eye, cheeks, sides of neck, and underparts light brownish-grey,

whiter on the throat and belly. Feathers of the wing hair-brown, margined with yellowish-green, yellower on the quills. Tail greenish-yellow, washed lightly with brown and with thin brown shafts. Carpal edge of wing white. Axillaries, under edges to remiges and rectrices, and vent sulphur-yellow.

Length about 4·5 in., wing 2·6, tail (of 12 mucronate feathers) 1·8, bill from front ·46, tarsus ·57.

Herpornis seems to me to connect *Zosterops* with *Liothrix*.

103. *ZOSTEROPS SIMPLEX*, Swinhoe, P.Z.S., 1862, p. 317.

I met the White-eye in all parts of Hainan, and procured several examples, which do not differ from the South-China bird. The most striking distinction between this and the *Z. palpebrosus* (Temm.) of India is in the latter being larger and having the green of the upper parts much yellower.

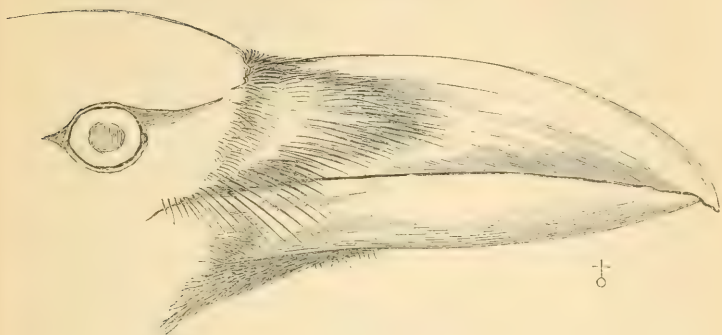
104. *PARUS CINEREUS*, Vieill.

The only Titmouse observed by me in Hainan. I have three skins which seem to agree to a feather with a specimen from India given to me by Mr. Blyth. The Chinese bird, as I have before noticed (Ibis, 1868, pp. 63, 64), is intermediate to the Indian and Japanese species.

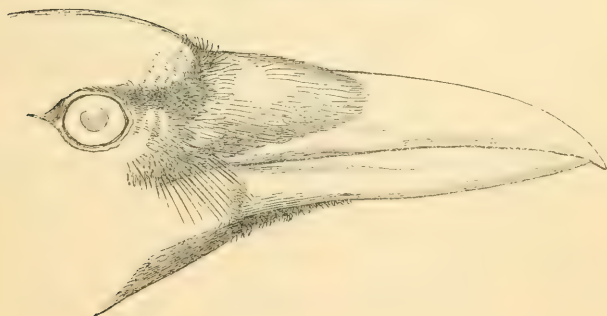
105. *CORVUS SINENSIS*, Gould.

On Naochow island we saw five Crows. All had small bills; and the one we shot and brought home has turned out to be *C. corone* of Europe. I was therefore not a little surprised to find the common and familiar Crow of Hainan to be a large-billed species. Mr. Tristram determined the Naochow bird and called my attention to an Andaman Crow sent me by Mr. Blyth. The Andaman Crow, however, I find to be of the *C. culminatus* group. *C. corone* did not occur in Hainan. The bill in the Hainan race attains a maximum size, and the wings and tail are longer; but all these vary in my specimens from Swatow, Foochow, Ningpo, and Peking. The Formosa bird, however, has the large bill of the Hainan race, with shorter wings. This I have separated as *Corvus colonorum* (Ibis, 1864, p. 427). I have the *C. japonensis*, Bp., from Hakodadi and Amoorland. It has a strongly curved and differently shaped bill, and is a larger bird.

Corvus sinensis.



Corvus corone ♀ ex Naochow.



Corvus sinensis.

Hainan.	♂.	Bill from gape	3,	depth	1.1	; wing	14.25	; tail	9.25
"	♂.	"	3	"	1.1	"	14.25	"	9.6
"	♀.	"	2.6	"	.9	"	13.8	"	8.5
"	♀.	"	2.8	"	.9	"	13.5	"	8.8
Swatow.	♂.	"	2.65	"	.95	"	13.25	"	9
"	♀.	"	2.5	"	.92	"	12.6	"	9
Ningpo.	♀.	"	2.45	"	.85	"	12.	"	8.25
Peking.	♀.	"	2.5	"	.9	"	13.1	"	8.75

Corvus corone.

Naochow.	♀.	"	2.25	"	.7	"	12.6	"	7.4
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The Hainan Crow is nearly as common and familiar in Kiungchow and other towns of the island as *C. splendens* is in Calcutta. They collect about the housetops, fighting and cawing, and drop into the courtyards, often even entering houses, picking up offal or any thing that takes their fancy. They roam about the neighbouring fields in large parties, and crowd together on the trees. The natives do not molest them; and this may account for their boldness, as in China the Black Crow prefers retired places in woods and hills, and rather shrinks from the presence of man. They appear to breed late in Hainan. About the middle of February we noticed them carrying about sticks for building-materials. From their peculiar habits I took the Hainan bird to be distinct from the China Crow; but I find nothing in their skins to justify separation. Its cry may be syllabled "Ah-ah! Kao-kao!" the latter uttered in a hoarse voice.

106. *CORVUS TORQUATUS*, Less.

In the plains of the north and north-west of Hainan this bird frequently occurs. I shot three specimens, which do not differ from Amoy examples. Their plumage is much abraded and discoloured from their nesting-duties, and it is evident they are as early breeders in Hainan as in South China.

Du Halde, in his 'Description de la Chine,' (*loc. cit.*) gives this species. He says, "several curious birds are also found there, such as Crows with a white cravat," &c.

107. *PICA MEDIA*, Blyth.

The Magpie was everywhere abundant in Hainan, following

the Chinese colonist and gladdening his heart with its lively movements and auspicious notes. It was breeding in February; and we frequently saw its nest, often placed in the basket-shaped cross-trees of the poles that stand in front of mandarin offices, and once, as I noticed in the preamble that heads this paper, in the heart of the leaf-crown that tops the cocoa-nut tree. According to the Chinese 'Gazetteer' of Hainan, the Magpie was introduced into Hainan A.D. 1450-56, from the Chinese main. It says, "'Tcheo,' commonly called the 'Bird of rejoicing.' Hainan was originally without this bird. In the King-tai reign of the Ming dynasty, Admiral Le-yih brought from Haipih [north of the sea, applied to Leen-chow-foo, at the head of the Gulf of Tonquin] ten or so males and females and let them loose. These having bred freely, the bird has become extremely numerous." The two examples I procured in Naochow island are bright and very similar to the Amoy bird, but have the white on their quills more extended towards their tips, but not so much as in the Peking bird. My two Hainan specimens have the white much as in Amoy skins. They are dull-coloured; but they were shot later in the season, and are worn from nidification.

Hainan.	♂.	Wing	7.25;	tail	9;	tarsus	2.08
"	♂.	"	7.7	"	9.25	"	2.08
Naochow.	♂.	"	7.7	"	9.25	"	1.85
"	♀.	"	8.6	"	10.5	"	2.25
Amoy.	♀.	"	8	"	9.75	"	1.85
Peking.	♀.	"	8.25	"	9.7	"	1.9

108. DENDROCITTA SINENSIS (Lath.).

On the 17th of February, on my way to Shuy-wei-sze (Central Hainan), a pair of these flew on to a tree by the wayside. I was out of my chair in a second, and secured one: "iris deep chestnut." Among the fine woods of Shuy-wei-sze they were not uncommon, going about in small parties. On one occasion I was attracted by a noise as of Jays quarrelling. I peered about to see what it was, and found a male of this species. He was standing on a twig close to his mate, and, leaning towards her, kept uttering the horrid barking noise that disturbed me. The mate was evidently love-stricken; for, by her quiet and attentive demeanour, she seemed enchanted with his music.

I have five specimens; and comparing these with two from the Province of Fokien (Tingchow Mountains) the Hainan race appears to be smaller, and browner, with the grey of the hind neck mixed with brown. The size of the small white wing-patch is somewhat variable. The Formosan race is distinct and is easily recognized by its larger size, and by the ashy grey on the basal half of the rectrices. This I have separated as *Dendrocitta sinensis*, var. *formosæ* (Ibis, 1863, p. 387). The Himalayan bird is the largest of all, and constitutes the *D. himalayensis*, Blyth (Ibis, 1865, p. 45).

I add the comparative measurements of the Hainan and Chinese birds.

Hainan.	Wing	5·2;	tail	7·1
"	"	4·9	"	6·5
"	"	4·9	"	6
Tingchow.	"	5·4	"	7·6
"	"	5·3	"	6·7

109. *ACRIDOTHERES PHILIPPENSIS* (Temm.), Bp., Cons. Av. i. p. 420. (Ibis, 1867, p. 387).

Differs in no respect from the bird (*A. cristatellus* of my former lists) that ranges from Canton to Shanghai. It was abundant about all towns and villages visited in Hainan.

Du Halde (*l. c.*) mentions this bird among the productions of Hainan, "Starlings which carry on their beak a small *lunette*."

110. *TEMENUCHUS SINENSIS* (Gmel.).

We first met this summer Starling on the 6th of March, on the Chinlan river (N.E. Hainan). On the 13th March, at Yu-lin-kan it occurred in large flocks; and after that, all the way round to Kiungchow-foo, they were often seen. I judge from this that they do not spend their winter in this island, but visit it in spring, passing onwards to summer in south China, some probably remaining during the warm season.

111. *STURNUS CINERACEUS*, T. & S.

These were often observed in small parties during February. Later in the spring we did not find them. They only occur in South China during the winter.

112. *EULABES HAINANUS*, sp. nov.

I frequently saw Grackles in cages in the towns of Hainan,

and was assured that they were indigenous to the island, but I searched in vain for the bird in its wild state. I took a caged specimen to Hongkong and compared it with the species sold in the shops there, which, as the Chinese report, comes from South-western China (Western Kwangtung, Kwangse, and so forth). The Chinese race has never been described, and we may for convenience' sake designate it

EULABES SINENSIS.

It is smaller than *E. intermedius* (A. Hay) of Tennasserim, has a smaller bill, and very narrow nuchal flesh-lappets. The naked skin below the eye is about .7 in. broad, and in shape nearly square. Its colours seemed to agree with those of the Tenasserim bird. The Hainan bird I placed alongside a Chinese specimen. They were both alive and I could not note their proportions; but they resembled one another greatly, and the only character I could fix for their discrimination was the subocular fleshy skin. The Hainan bird had it narrow, .25 in.; and the skin was lengthened downwards, and not square. I examined several of the Chinese form, and they all agreed in having it square-shaped. On this peculiarity I venture to separate the Hainan race; for my single specimen was left in charge of a friend, in whose hands it died, and, notwithstanding all my careful instructions, it was thrown away.

In the Chinese work on the Kiungshan District of Hainan the following occurs: "‘Tsin-ke-leao’ [*Eulabes*, sp.]. South of the Meiling [mountains north-west of Canton city] there is a bird in appearance like the ‘Keu-kuh’ [*Acridotheres*], but larger and violet-black. The sides of its head have yellow flesh. It has a crimson bill and yellow feet, man’s tongue, and man’s eye; below the eye connecting with the neck is a deep-yellow patch. White examples also occur. Its eye is of three kinds. The yellow-eyed is the ‘Golden Grackle,’ and is the best. The white-eyed is the ‘Silver Grackle,’ and stands next. The black-eyed is the ‘Iron Grackle,’ and is the most inferior. Kept long it can learn man’s words. It is vulgarly called ‘Leao-ko.’ It bears also the name ‘Han-kin’ [Bird of Han] ”.

Du Halde (*op. cit.*) mentions this bird as follows: “Merles

of a deep blue, which have two yellow ears raised half an inch, which speak, and whistle perfectly well."

The *Gracupica nigricollis* (Paykull) of South China did not occur in Hainan, though it is found in Siam.

113. *MUNIA TOPELA*, Swinhoe, 'Ibis,' 1863, p. 380.

114. *MUNIA ACUTICAUDA*, Hodgs.

Both these were common. My specimens of the latter are darker on the head and breast, like the Burmese and Formosan race, which differs in this respect from the Chinese bird.

115. *PASSER MONTANUS* (Linn.).

The domestic Sparrow, as usual, in these parts.

116. *EMBERIZA FUCATA*, Pall.

On the cleared grass-covered hills of Lingmun (Central Hainan) I shot three specimens of this Bunting on the 23rd of February. They were in company with Larks, Pipits, and other birds of cultivation.

117. *EMBERIZA SPODOCEPHALA*, Pall.

Common about gardens in February.

118. *EMBERIZA AUREOLA*, Pall.

On the 29th of March, at Haosuy (West Hainan), we got a fine male of this species.

119. *ALAUDA CÆLIVOX*, Swinhoe, Zool. 1859, p. 6724.

The little Sky-Lark was common in all cultivated parts of Hainan. I met it even in Lingmun (Central Hainan). From this last place I have the typical bird as found at Amoy. But from Hoitow (West Hainan) I have two examples with a longer and more arched bill, and with the hind claws very long. The feathers of their crowns, too, are longer and broader, and the upper feathers generally larger. Bill from forehead .58 in., from gape .67; tarsus .94; hind toe .42, its claw .85; wing 3.7; tail 2.5. These agree with my specimens of the Lark of North Formosa, of which I have a large series. I propose to name this race *ALAUDA SALA*.

120. *OSMOTRERON DOMVILII*, sp. nov.

During my few days' stay in the interior of Hainan I several times came across this little Green Pigeon, generally in pairs or small parties, keeping to the tops of high trees. I shot two

pairs. The iris has a circle of fine blue round the pupil, with a broad outer one of golden yellow. The basal half of the bill is fine blue, the apical half pale greenish-blue. I saw a Green Pigeon at the south end of the island, but I cannot be sure that it was of this species. It is closely allied to *O. bicincta*, Jerdon (B. Ind. iii. p. 449), but differs by its smaller size, by its forehead and throat being green, by the grey on its nape being small, in the form of a round spot, and not extending to the sides of its neck, and the much brighter yellow on its belly and underparts. Length about 9 inches; wing 6; tail 3.75.

The female is rather larger than the male, has the nuchal grey still smaller, wants the lilac and orange pectoral bands, and has the under tail-coverts very pale cinnamon. Length about 9.5 in., wing 6.3, tail 4.

I name this species in honour of Lieutenant Domville, R.N., who commanded the gunboat 'Algerine,' in which we made the cruise.

121. CARPOPHAGA SYLVATICA, Tickell.

At Shuy-wei-sze (Central Hainan) on the 18th of February, as I was passing a farm-house, one of these monster Green Pigeons alighted on a tree in a paddock alongside. It was not timid, admitting of close approach. Its irides were dark pink. I did not come across the bird again till we got round to Hung-pe (West Hainan) on the 30th of March. On shore there, among the tall trees near villages, we found a small party of them and secured five. The irides of these I noted as "crimson." The birds were excellent eating. I have compared my specimens with skins from India, and can find no notable difference. Wing 9 inches, tail 6.

122. MACROPYGIA TUSALIA (Hodgs.), var. MINOR.

At Tai-ping-sze (Central Hainan) this fine Dove was one of the commonest, occurring in all the large woods. Its coo is like that of the English Turtle, but more hurried and harsher. It is called by the Chinese there the "Luy-vong-tuy" (the Thunder-king's Dove). I shot several, of both sexes. The iris is composed of two circles, the inner one narrow and white, the outer broad and purplish-pink. The female and immature bird

carry bars on the underneck and breast, which disappear in the adult male. It was also pretty common in the jungle at Nychow (South Hainan).

My specimens are smaller than Himalayan skins, and the reflections on the hind neck have more pink and less green; but if too close for specific separation, they are worthy at least of the rank of a variety. A male from Hainan measures 13 inches, wing 7·27, tail 7·3; a female 12·5, wing 7·2, tail 6·8.

Du Halde (*op. cit.*) says, of the Hainan *Columbidæ*, "they have Turtle Doves in abundance, and two species of Cushats."

123. *TURTUR RUPICOLA* (Pall.); *T. gelastes*, T. & S. Faun. Jap.

A few of these were about the neighbourhood of Kiungchow city in February.

124. *TURTUR CHINENSIS* (Scop.).

I thought to have met the *T. tigrinus*, Temm., of the Straits; but everywhere in Hainan the common species was the bird that ranges from Canton to Shanghai. The skins I have brought back do not differ from Chinese examples. This Dove is called by the Hainan Chinese "Ko-tuy," the dialectic rendering of the Amoy "Ka-tsy."

125. *TURTUR HUMILIS* (Temm.).

I shot a pair of these near Kiungchow city on the 10th of February, and saw them later in other parts of the island. They were not common.

126. *CHALCOPHAPS INDICA* (Linn.).

On the 27th of February at Shuy-wei-sze (Central Hainan) I saw and procured the only specimen of this lovely little Pigeon. It flew up from the ground and perched on the low branch of a tree. It is an adult male, differing from the skins from India and Ceylon that I have seen in being of a darker purple on the breast and belly, and in wanting the violet edgings to the feathers of the hind neck; but in a series of the former I find both the tints of the underparts and the amount of violet on the hind neck variable in intensity and extent, and I will not attempt to separate the Hainan bird on the peculiarities of a single specimen. Its wing measures 5·85 inches, its tail ·4, and its tarsus ·92.

127. *GALLUS FERRUGINEUS* (Gmel.).

I fully believed that Hainan would yield a Pheasant of some kind, and I never ceased inquiring of the natives whether "Hill-fowl" (the usual expression for Pheasants) were found among their woods. The reply was in the affirmative, and I eagerly looked out for them. Judge my disgust, then, when I discovered that the wonderful "Hill-fowl" was only a wretched Jungle-cock. Though greatly disappointed, in heart I was still pleased to make the acquaintance of a bird that I had not met before. On the 18th of February I was rambling in the early morning at Shuy-wei-sze (Central Hainan), and stepped through a hedge into a field at the further end of which was growing a patch of sweet potatoes. A rustic who was with me pulled me by the sleeve and cried "Twa kai" (Hill-fowl). I turned, expecting of course to see a Pheasant. The clod-hopper was pointing at an ordinary-looking rooster standing in the middle of the field with body erect and tail decumbent. Seeing me take no notice, the native cried out again, "Shoot, it is a wild bird, and not a barn-door fowl." I looked again and saw the bird moving away behind a hedge. When I got in view of him again, he ran for the hedge with all speed. There was no waddle in his gait, and I then saw that it was a wild bird. I fired and ran up. The wounded bird flapped and tumbled about precisely as a cock does when its neck is broken and it is thrown down to die. My heart misgave me; I thought I had shot some poor peasant's fowl; but I was wrong, every one I met told me that it was a genuine wild fowl, and on carefully examining it I found it to be so. Unfortunately neither its hackle nor its tail were fully developed. Its comb was small, and its spurs wart-like. Its iris was orange-yellow. Skin under the ear cream-white, purplish pink at its forward corner. Bill ochreous, brown on culmen. Legs brownish-grey, tinged with purple. Its intestines measured 3.5 feet; and its stomach contained sweet potatoes, vetches, and stone-grits. Its flesh was juicy and delicious eating, and quite different in flavour from that of the Barn-door. Its *testes* were of an enormous size; so that there can be no doubt the bird was breeding. On the 27th of February I visited the same field again; and on the same spot

where I first saw the cock, appeared the hen. Several natives were with me. They shouted "Hó hó Twa kai" (look, look ! Hill-bird) ; and at the noise the hen rushed into the hedge, and we tried to beat her out in vain. She seemed to be of a deep brown colour, and in running kept her head low and her tail partly erect.

At Lingshuy (S.E. Hainan) we found grave-mounds on the edge of the jungle strewn with cock's feathers, as if the wild fowl were in the habit of meeting on the mounds to fight. At Yu-linkan (S. Hainan) I heard them repeatedly chuckling in the jungle quite close to me ; but there was no getting a shot at them. In the dense woods about Nychow (S. Hainan) they were particularly common, and we heard and saw them often. When put up in the open, they make at once for the covert, flying heavily, with the body and tail nearly perpendicular. I saw a Le man put a cock bird up ; and marking it drop into the wood, I hastened to the spot. It gave a crow "tok-tok tok tok chea"—as a domestic hen does when frightened. My follower raised it from the thick bush with a stone ; it flew a short distance, and fell again into the thicket. Our party returned to the boat without a Jungle-fowl ; and we saw no more of them in the course of our cruise.

The single male specimen that I have brought home is sufficient to show, from its black underparts and its general colouring, that the Hainan bird belongs to the ordinary species. The small hackles of its neck, however, are richer chestnut than in my Indian examples, and the feathers of its rump a much brighter red. But these vary in the different races of this bird, and my specimen is too undeveloped for close comparison.

I may mention that I noticed that the poultry of the villages on the outskirts of the jungle were very like the wild fowl, though I could not learn from the natives that they actually crossed. I considered this an important fact when I first observed it, as I was then under the impression that the Hainan Jungle-cock was a peculiar species. But in the case of *G. ferrugineus* this has already been noted by Mr. Blyth.

Du Halde ('Description de la Chine,' i. p. 230), mentioning

the Game Birds of Hainan, says, "There is there a Jungle-cock, which is of an exquisite taste."

The Chinese 'Gazetteer' remarks, under the characters "Shanke" (or Hill-fowl), "Loves to see its plumage reflected in the water, when it dances. During the reign of the Emperor Woote, of the Wei dynasty [A.D. 499-514], the southern regions presented this bird as tribute. If a large mirror be placed before the fowl, he sees his form reflected and dances without stopping."

A mandarin in Hainan informed me that Lui-chow-foo (the peninsula opposite to Hainan) produces a bird like a fowl, with longer legs, called the "Luy-kung-tsai" (Child of Lightning). This may interest some*.

128. *FRANCOLINUS SINENSIS* (Osbeck).

F. pintadeus (Scop.); *F. perlatus* (Gmel.).

The South-China Francolin was common everywhere in Hainan, and we repeatedly heard its loud note. At Lingshuy (S. E. Hainan), I bought three males from a Chinese bird-catcher. He had caught them by a slip noose, with the help of a decoy bird. On our return to the capital (2nd April) we found them extremely common about the grave-covered plains, and often saw, as we passed along the road from the sea-port to the city, a cock Francolin perched on the top of a grave-mound shrieking out its loud call. The Hainan skins are similar to those from South China.

The Chinese 'Gazetteer' says of this bird, "the 'Chay-koo'

* It would be as well here to remark on the Peacocks which I saw in an aviary at the residence of the Governor of Hainan, and thought (Ibis, 1868, p. 353; P. Z. S. 1868, p. 530) were *Pavo nigripennis*, Scater, from the blackness of their wing-coverts. These birds, the Governor informed me, came from Cochin China, and had, as far as I can recollect, a crest shaped like that of *P. muticus*, and not like that of *P. cristatus*. I find, on my return to England, that Mr. Scater's bird has the latter; and therefore I regret that I was so hasty in identifying the Cochin-Chinese bird with the *P. nigripennis*. On my last visit to England, I took note of the then new species; but my attention was not called to the shape of its crest, and I was led rather to regard the difference of its wing. Hence it is likely that the Cochin-Chinese species may be *P. muticus* after all.

[Francolin], when flying, is obliged to turn towards the south. Its cry sounds 'Kow chow kīh tīh'. It also says, 'Hing puh tīh yáy, kó-kó' [It is indeed of no use, my brother!]"

129. EXCALFATORIA CHINENSIS (Linn.).

On a grassy hill at Lingmun (Central Hainan) I fired at an *Emberiza fucata*, and put up three of these little creatures from quite close to me. I saw distinctly that they were two males and a female of this species. I may add that the female is the bird that I described before as *Coturnix caineana* from Swatow (Ibis, 1865, p. 351).

130. ?TURNIX MACULOSA (Temm.).

I flushed a *Turnix* also at Lingmun, and at Nychow (S. Hainan) saw several rise from the dry grass outside the jungle. We did not pick up a single bird. The Lingmun bird looked like the *T. maculosa*; but it is not easy to determine one of this genus without actual handling.

131. SQUATAROLA HELVETICA (Linn.).

A specimen of the Grey Plover was shot on the mud of the Hungpe lagoon (W. Hainan) on the 30th of March.

132. CHARADRIUS LONGIPES, Temm.

This Golden Plover was common in the marsh near the city on the 5th of February. We found it in the dry rice-fields of Paklai (W. Hainan) on the 21st of March, and abundant among the sweet-potato gardens of Hoitow (W. Hainan) on the 23rd of March. On the 2nd of April, at the port of Kiungchow, we found them on the beach; they were then beginning to acquire the black underdress of summer.

133. ÆGIALITIS GEOFFROYI (Wagler).

On the mud of the creek at Paklai (W. Hainan) I shot a specimen of this large-billed Sand-Plover.

134. ÆGIALITIS MONGOLICUS (Pall.).

On the 7th of March, on the Chinlan river (N. E. Hainan), we shot one of these out of a small party that were about the sandy banks, and on the 30th of the same month I got another at Hungepe (N. W. Hainan). They were both in winter plumage. I have never found it on the south coast of China; but in

Shanghai a number of them, with many of *Æ. geoffroyi*, were hanging up in the market on the 18th of May, all in more or less complete summer plumage. The Hainan and Shanghai birds agree in proportions, and are evidently of the same species as that figured by Middendorff from the Amoor.

135. *ÆGIALITIS DEALBATUS*, Swinh., P.Z.S. 1870, p. 138.

The true Kentish Plover we did not obtain on the coast of Hainan, but the resident form of South China, which I have lately separated. All the five specimens which I brought away are of this pale-legged race.

136. *ÆGIALITIS INTERMEDIUS* (Ménétr.).

We shot one little Sand-Plover in Hainan which agrees with South-China and Indian specimens, and is of the same species as the larger of the two European smaller Ringed Plovers. The true *Æ. curonicus* I have not met with in China.

137. *HOPLOPTERUS VENTRALIS* (Wagler).

On the 18th of March, at Lingshuy (S. E. Hainan), we were riding along the bank of the little river that discharges into the lagoon, on our way to the Hien city, when I noticed a Kite pounce down on something on a little sandy island. The something attacked was a bird, which flew up with an angry cry, and struck at the Kite with its wings. It looked like a small Grey Harrier. I at once waded my pony across, and, dismounting, made for the spot. The Kite's quarry turned out to be a large Plover. Its mate was not far off, and, with the help of my comrades, I secured the pair. I was delighted to find that they were *Hoplopteri*, with long black crests, and a fine black spur on each carpal joint. The iris was of a deep rich brown. My specimens (♂ and ♀) are of the same size and colour, and do not differ from Indian examples.

138. *STREPSILAS INTERPRES* (Linn.).

We found large numbers of these in the Poochin river (N.W. Hainan) on the 5th of March. They sat on the fishing-stakes, and ranged themselves in rows on the ropes that ran from stake to stake. The four specimens I brought away are all acquiring the summer plumage.

139. *GRUS CINEREA*, Bechstein.

I have before noted that the Common Crane occurs in small parties every winter on the sand-flats of Swatow. In Naochow and Hainan they were very abundant, and we often had opportunities of watching them. They are prized as food by the natives, and the soldiers shoot at them, which renders them wild and difficult of approach. They feed largely here on sweet potatoes. It was only on the plains and open parts of the country that we saw them. They did not occur south of the mountains. The last flight we noticed was on the 23rd of March, at Hioitow (W. Hainan).

The magistrate at Lingmun informed me that "Cranes are born in pairs and mate for life. If one is born singly he remains a bachelor all his days, and becomes sentinel to the flock. This is a hard duty to perform; for if the sentinel gives a false alarm he is beaten, and if he does not give the alarm soon enough he is also beaten."

The Chinese 'Gazetteer' remarks on the abundance of Cranes in Hainan, and their scarcity in other parts of the Canton province.

140. *GALLINAGO STENURA* (Temm.).

We met this Snipe everywhere in Hainan during the whole of our stay. The females are larger than the males, more mottled beneath, and have the pin-shaped lateral rectrices longer and broader.

141. *GALLINAGO SCOLOPACINA*, Bp.

The Common Snipe was found in small parties in the marsh near the capital in February.

142. *RHYNCHÆA BENGALENSIS* (Linn.).

Often flushed.

143. *LIMOSA UROPYGIALIS*, Gould.

A pair were shot out of a party of Godwits feeding in the shallows of the creek at Hungpe (N. W. Hainan) on the 30th of March; these are nearly in full summer plumage. Later, on the 2nd of April, a solitary bird was picked off the sandy shore of Hoehow harbour; this is in the winter dress.

144. NUMENIUS MAJOR, T. & S.

On our road to Lingshuy city (S. E. Hainan), on the 11th of March, I shot a solitary female of this species feeding in a stream. They were common enough in Hoehow harbour up to the beginning of April; and we got a female there on the 5th of February. The March bird was tinged with yellowish-chestnut on the dark parts of the upper plumage, showing that it was acquiring its summer dress.

I may here note that I have lately ascertained for a fact that the shorter-billed bird, which I before identified with *N. arquata* of Europe, is the male (the long-billed being the female) of *N. major* of Japan and China.

145. TRINGA ALPINA (Linn.).

In flocks on the Hoehow marsh.

146. TRINGA ALBESCENS, Gould.

A single specimen of this was shot on the Hungpe mud-flats on the 30th of March.

147. TRINGA PLATYRHYNCHA, Temm.

Shot on the Hoehow marsh, February 5th.

148. CALIDRIS ARENARIA (Linn.).

Shot in the Hungpe creek, March 30th.

149. LOBIPES HYPERBOREUS (Linn.).

As we were leaving Hungpe, four of these little birds flew towards the ship, and sat floating on the water close to her. On the 4th of April, on the shore of the Luichow peninsula, I saw one floating on a little pool caused by the tide overflowing a hollow in the sands. This specimen I secured.

150. TRINGOIDES HYPOLEUCUS (Linn.).

Common everywhere about water.

151. TOTANUS GLAREOLA (Gmel.).

On the 2nd of April we found the Wood-Sandpiper common in the springing rice near the capital; and plenty of them were being hawked about the city.

152. TOTANUS OCHROPUS (Linn.).

Seen on the Hoehow marsh.

153. *TOTANUS GLOTTIS* (Linn.).

Often seen, and many shot. On the Hoehow marsh in flocks of thousands. One specimen bagged had the under parts stained pink; it had probably been paddling about in the slough from some dyeing-establishment. The Chinese in Hainan often stain their white poultry with this colour.

154. *TOTANUS STAGNATILIS*, Bechst.

A party of them observed on the Hoehow marsh, on the 5th of February.

155. *TOTANUS CALIDRIS* (Linn.).

One of these was shot out of a party on the same marsh, and on the same date as the last mentioned.

156. *GALLINULA PHENICURA* (Pennant).

This Moorhen was common everywhere about the low lands. I saw it on the ponds within the walls of Kiungchow city, and frequently in the country in its neighbourhood. Also at Heongpoo (W. Hainan).

157. *LEPTOPTILUS JAVANICUS* (Horsf.).

Noticed on several occasions in the interior of Hainan about the moist paddy-fields, and about streams and ponds, always alone. The most intimate acquaintance I made with it was on the 24th of February, at Lingmun (Central Hainan). I was with my gun strolling up a grassy hill, when I noticed a Chinese gentleman coming in my direction in a sedan-chair. He suddenly had his chair put down, and spoke to one of the bearers, who came running to me and pointed to a paddy-field close to it, crying "*Hoang*," the name in Hainan for this bird, and beckoning me to go to it. I looked and saw a fine Adjutant standing in the water among the sprouting rice at the edge of the field. I walked slowly up to him. He sprang up, but again settled. I did not fire. He rose again, and made as if he would settle again, but, changing his mind, spread his expanse of wing and sailed away, ascending in broad circles, and never coming again within gunshot. I was so fascinated with my close interview with this majestic bird that I lost the will to fire at him. His upper parts appeared blue-grey black, and

his under parts white. He had a bare head and neck, of a yellow colour.

158. *ARDEA CINEREA*, Linn.

Seen in all parts of the island.

159. *HERODIAS ALBA* (Linn.).

160. *HERODIAS GARZETTA* (Linn.).

Both common. I shot one of each as they stood together in the shallows of the main river near Tinggan city.

I may here note that, on the marsh near Hoehow, I saw, on the 5th of February, a small party of large white birds flying over out of gunshot. They were of the size and general appearance of *H. alba*, but with short legs. They were not *H. intermedia*, nor indeed, I think, Herons at all, though they had pointed bills. I cannot conjecture what they could have been. I only saw them on that one occasion.

161. ?*ARDEOLA PRASINOSCELES*, Swinhoe, Ibis, 1863, p. 421.

The Squacco Heron was abundant about the paddy-fields and moist places, but it had not yet begun its moult. I shot one; but in the winter plumage it is almost impossible to state its species. In measurements it corresponds with specimens from South China; but so does a specimen from Siam. The Siamese bird is, I presume, the *A. bacchus*, Bp., of Malacca*; ours may be the same. I therefore register it with a doubt. I have the *A. leucoptera* (Bodd.) of India in the winter plumage. It seems to have smaller legs, more of the size of those of *A. speciosa*, Horsf., of Java.

This bird is recorded in the Chinese 'Gazetteer' as "the 'Crane with waterproof clothes'†. Vulgar name, 'Paddy-field Cow-slave.' Plumage of a striped colour like waterproof coats. Usually in paddy-fields, following cattle and in their train seeking its food. Hence its common name."

162. *NYCTICORAX GRISEUS* (Linn.).

Often seen in large flocks.

* In the Paris Museum they have the true *A. prasinosecles* from Cochin China; so that the Hainan bird is pretty sure to be the same.

† The waterproof cloak of the Chinese is made of bamboo leaves, and has the appearance of the neck of the Squacco-Heron in winter plumage.

163. *ANAS PENELOPE*, L.164. *ANAS CRECCA*, L.

I did not come across any large tract of water in the interior of Hainan. On the rivers and marshy grounds near the coast, Ducks, even in February, were very scarce. We only noticed occasionally small parties of Wigeons and Teal of the two species named.

Du Halde (*loc. cit.*) remarks that in Hainan "Game abounds, and you can hunt there in every style. The Partridges, Quails, and Hares are not so good as those of Europe; but Snipe, Teal, and all the river birds are very good."

165. *PODICEPS PHILIPPENSIS*, Gmel.

Often seen on the small ponds and little streams in Hainan. I preserved one specimen.

166. *DIOMEDEA BRACHYURA*, T. & S.

Observed at sea off Hainan on various occasions during the cruise.

167. *LARUS NIVEUS*, Pall.; *L. canus*, var. *major*, Middend. Sib. Reise.

168. *LARUS CACHINNANS*, Pall.; *L. argentatus*, var. *major*, Von Schrenck, Reis. Amurl.

In February Gulls were about the Hoehow harbour (port of Kiungchow), but I made them all out to belong to these two species. On the 30th of March we saw them again at Hungpe (N. W. Hainan); and on our return to the capital in April there were still some about. *L. crassirostris*, Bp. (*L. melanurus*, T. & S.), of Japan, does not appear to go so far south.

169. *STERNA CASPIA*, Lath.

Plentiful about the harbour of Hoehow in February and beginning of April. We often saw them sitting in large parties on the sand flats. I shot one, which has rather an immature wing. It has a white crown and occiput, covered with broad black streaks, the black mottling continuing all over the lores downwards to the rictus, and thence in a line to the ear-coverts. As the adult *S. caspia* has the black extending only to the nostril, and thence backwards, grazing the lower lid of the eye, I

thought the Hainan bird peculiar; but on looking through my Amoy series, I find that the adult in winter plumage, while it has the crown and lores mottled, has a black patch from the rictus to the ear-coverts. In a bird shot in March, with a bill much deeper red, this black has nearly disappeared, and the crown is much blacker; and, lastly, in another in full nuptial dress the white has returned to the space from the nostril backwards, as in a European specimen, kindly lent me for comparison by Mr. Cooke. This settles my doubt as to my supposed novelty, and adds a little information as regards the change of plumage in the true *S. caspia*.

170. *STERNA MELANAUCHEN*, Temm.

On the rocks near Hoehow.

171. *SULA FUSCA*, L.

On the 15th of February, up the main river near Tinggan city, I watched a Gannet soaring overhead. It was a clear sunny day, and I could see plainly that the bird was of this species.

172. *GRACULUS CARBO* (L.).

On the 28th of March, at Haosuy (W. Hainan), we saw a large party of Cormorants fly past. They looked like the ordinary species, which is the commonest one during winter in South China. Mr. Gould has shown me one of the same in full plumage received from Siam.

From the above list it will be seen that the avifauna of Hainan resembles more that of South China than one might expect in so low a latitude. It has, however, a close affinity to that of the Tenasserim countries; and only a few species seem to connect it with Formosa. I originally intended to discuss this subject in detail; but my materials are, perhaps, too scanty.

XXV.—*The Natural History of Quiscalus major*.

By ELLIOTT COUES, M.D., United-States' Army.

ALTHOUGH this bird is very abundant in some parts of the United States, its habits seem not to have been sufficiently in-

vestigated, and may be said to remain comparatively unknown. The several accounts that have been published are not entirely accurate, or else are imperfect and otherwise unsatisfactory. Mr. Ord's paper (one of the earliest) transposes names, and is deficient in some respects. Bonaparte wrote a short notice to accompany the figure in his continuation of Wilson's 'Ornithology,' but perhaps never saw the bird alive; his observations on its habits are not entirely pertinent. Nuttall's article is compiled, almost copied, from this source, and gives nothing new. Audubon's is in advance of the preceding, though still leaving somewhat to be desired. These being the principal, if not the only accounts of the habits of the species that have appeared, it has occurred to me that my facilities for studying the bird in its native marshes might be turned to account in correcting some errors that have been committed, and in completing, it may be, the natural history of the species.

The Boat-tailed Grackle (or "Jackdaw," as it is usually called) is one of several characteristic species* of the South-Atlantic and Gulf States. But though thus belonging to what is termed the "Carolinian Fauna," it strays to the Middle States occasionally or frequently in summer, and in some instances, it is said, even to Southern New England†. Still it is not abundant, nor even common, beyond the Carolinas. In the other direction it has occurred as far south as the mouth of the Rio Grande‡, being associated in Texas with the larger *Q. macrurus*, that seems to replace it beyond this region. It is, moreover, a maritime species, almost entirely confined to the immediate vicinity of the sea-coast; so that its range is seen to be unusually restricted, and to be represented only by a narrow belt that follows the shore-line from Texas nearly, or quite, to the Middle districts. Those authors, we think, are wrong who say, without qualification, that it passes beyond the United

* *E. g.*, among land-birds, *Sitta pusilla*, *Protonotaria citræa*, *Helminthus swainsoni*, *Helminthophaga bachmani*, *Dendræa dominica*, *Collyrio ludovicianus*, *Cyanospiza ciris*, *Peucea æstivalis*, *Antrostomus carolinensis*, and *Picus querulus*.

† *Cf.* Coues, 'Birds of New England,' p. 37, upon the authority of Allen and others.

‡ Baird, B. N. A. 1858, p. 555.

States in winter*; for while possibly a certain proportion of the whole number of individuals may do so, all unquestionably do not. We have no data for denying the affirmative here, but are in position to affirm this negative. Thus, even in North Carolina, not far from the northerly terminus of the species, it is a resident bird; we have observed individuals in every month, and, for the most part, at weekly or less intervals. Towards December, however, there is a material and very evident falling off in their numbers; they do not become plentiful again until the latter part of February; and it is probable that, during an especially cold season, they may disappear for a short time. The weather, as affecting their means of subsistence, mainly determines their movements; for, like all their allies, the Jackdaws are true migrants, and there is always a north-south swaying of the greater number of them in spring and fall; while, at the same time, it is doubtful whether any localities within their usual range are incapable of affording a supply of suitable food at any season; and this is what mainly or wholly determines their presence or absence.

Except at the approach of, and during, the breeding-season, the sexes mostly keep in separate flocks, though they may often be temporarily thrown together. The males appear to usually follow the females and young birds in their migrations, more particularly in passing southward in the fall. After the greater number of individuals have left, many hardy males in fine plumage may be seen for some time; it is generally these that are to be observed in winter in North Carolina. It might be expected that at the spring migration these more vigorous birds would lead the van; but, as a matter of fact, flocks of the females, readily distinguished by their small size and brown colour, are commonly the first indications of the coming northward of the great body of the birds.

We have no occasion to give the description of a bird so well

* Thus Bonaparte, for example:—"About the latter end of November they leave even the warm region of Florida to seek winter-quarters further south, probably in the West Indies." It is to be presumed that some of the similar statements may have arisen from confounding the species with one of its near allies.

known as this ; but certain features, particularly in respect of changes of plumage, may be in place. The moult is double ; the plumage is renewed early in the spring, and again in autumn, as soon as domestic duties are finished *. The change begins on the head and fore parts of the body, and proceeds regularly backward. Thus we have shot specimens early in April not to be surpassed in the brilliancy of the hues of the head, body, and wings, which were freshly feathered, yet with faded and evidently well-worn rectrices. When in full plumage, the tail is a most conspicuous feature ; in size this is intermediate between that of *Q. macrurus*, and of *Q. versicolor* : it is highly lustrous, with a rounded (not cuneate) outline, and shows the peculiar upward slant of the lateral rectrices, which leaves the middle pair to represent the keel of a boat, whence the trivial name†. At this season the beautiful metallic gloss and iridescence of the plumage rivals in intensity that of *Q. versicolor* itself, though the tints, as is well known, are quite different. The iris is a clear pale straw-yellow ; the bill and feet are ebony-black. The fresh feathers of the full moult are hardly inferior in beauty to those of spring. The female might easily pass for another species, lacking, in great measure, the unusual development of the tail, and being as much smaller, comparatively, in other dimensions : while a perfect male may measure 16 inches, or even a little more, a female in equally full plumage may fall short of 12 inches. She is brown, paler, and somewhat greyish below, with a shade of greenish-black (nearly "invisible green" sometimes) above, and especially on the wings and tail. Her eye is pale yellow, like the male's. The young have brown irides, which gradually change to yellow, a case parallel with that of some or many Hawks. When the young first leave the nest, they are clear warm brown above and pale grey below, almost white on the abdomen ; the naked space about each eye is large ; there is a tuft of fluffy down upon the head—remnant of what had covered the whole body. This tuft shortly disappears ; and the colours

* It should be borne in mind, especially regarding dates, that reference is had, in all instances, to observations made in North Carolina.

† And probably also, in case of allied species, the technical word *Sca-phidura*.

rapidly change, especially on the males, in which the brown gives way to blackish upon the back, wings, and tail, and the grey underneath to brown like that of the head. During the progress of the moult (more particularly on the face) some curious stages may be found. Besides having new glossy black feathers interspersed among the old faded brown ones, these latter may, upon the head and underparts especially, turn white; then the birds are black and brown, with a whitish head and a well-defined white stripe continued from the throat along the middle line of the breast and belly. This singular condition has apparently not been noticed*. By the end of October the moult is finished; the old birds are in full winter plumage, and the young have gained their first complete dress.

In the spring, as soon as those birds which went south return, the sexes, no longer discrete, come together in flocks to roam at large for a while over the marshes in company with great numbers of the Redwings (*Agelaius phœniceus*). Their hoarse voices resound from every reed-patch, where the flocks are feeding half concealed, and are borne upon the air from every quarter as the dusky troops wheel overhead in solid phalanx, executing sudden and unaccountable evolutions as if guided by some single commanding spirit. Now hovering uncertain, then dashing impulsive, now veering in an instant, then taking a long steady flight towards some distant point, more unstable, vacillating birds cannot be found. This is after a certain time in April, varying with the advancement or retardation of the season, before which they had been comparatively quiet; the sexual impulse is daily growing stronger, and is manifested by increased restlessness and impatience. The flocks break up into loose straggling companies, which rapidly become indifferent to each other's society, and at length the pairing is accomplished. During this transition state (this periodic recurrence of puberty that with birds is perennial) the Daws' voices crack like any youth's, and they utter a curious medley of notes from *bass* to *falsestto*, notes that are certainly unmusical to any ears but those for which they are intended. The jingling jargon is indescri-

* I have seen much the same thing in the case of *Xanthocephalus icterocephalus* in New Mexico in August and September.

bable ; doubtless even Nuttall, with ear attuned to the feathered orchestra because his heart was in accord with his favourites, could have made nothing of such " sounds inharmonious in themselves and harsh." The nuptials over, the birds suddenly forsake the open marshes, where before they roamed at will, and gather in small companies about the thickset bush-clumps that hedge in the reedy waste, to assume more serious parts. Their sociability at this time may result partly from gregarious instincts, probably never wholly suppressed, partly from similarity in choice of the comparatively few entirely eligible breeding-places. Thus a dozen or a score of pairs may occupy a thicket only a few rods across ; and these, moreover, share proprietorship amicably with their friends the Redwings and their familiar acquaintances the Green Herons (*Butorides virescens*). Such a breeding-place (to select one from the many I have visited) looks from the outside like a solid mass of foliage with never a nest in sight ; but if one creeps inside and looks upward, he has a different view. A close canopy of green shuts out the blue one beyond ; leafy twigs are matted together and intertwined with a network of vigorous vines ; the Herons have slung their platforms, like hammocks, in the midst of the swinging trailers ; while in the forks and crotches of the shrubbery, or in the meshes of the contorted creepers, are placed the nests of both kinds of Blackbirds, sometimes so thickly that half a dozen may be within arm's length. On such an occasion as I attempt to portray, the Herons will flap off, in as great haste as their natural indolence allows, in perfect silence or with feeble remonstrance, and perch upon neighbouring outposts, on the watch, stiffly erect, like statuesque caricatures, showing their ungraceful shapes to the least advantage. The impulsive Redwings will betray their emotion, hovering dismayed with anxious cries, or alighting only to take instant wing again. The less passionate, if not less troubled, Boat-tails have already slunk quietly off with scarcely a note to tell their whereabouts ; nor will they return until they think the field is clear. This is especially so with the females : the males may be more solicitous ; but, unlike the Redwings, they generally take care to keep at a safe distance. It is to be feared, indeed, that they are not over-attentive or faithful part-

ners ; for while their mates are incubating, they may commonly be seen feeding by themselves in the marsh ; and it is doubtful whether they either bring food home or take their turn about at the nest. In fact, they seem to have forgotten the lively interest they felt in domestic concerns while their throats were swollen with an epithalamium.

The nest of the Boat-tail is a strong, substantial, and rather bulky fabric, but neither tasteful nor elegant, seeming as if built solely for use, without thought of the ornamentation that many more æsthetic birds take delight in bestowing upon their home. It is composed chiefly of interlaced twigs and intertwined grasses, rushes, or strips of fibrous bark or roots, with a few dried leaves for filling or lining ; none of the many I have examined contained any hair, moss, or mud. The thickness and irregularity of the walls make the structure look unusually large, as compared with its internal dimensions ; the special contour is chiefly determined by the site. When a nest is hung in a lacement of vines, it is looser and more irregular than when saddled upon a fork. The cup is usually rather deeper than broad, and has a well-defined brim, the materials being there more closely interwoven.

With these birds the laying-season is at its height during the latter part of April and beginning of May ; this is the best time for taking the eggs, as most of the nests have received their complement, and incubation is only just begun. I have found in no instance more than six or fewer than three eggs in a nest ; five and six are the usual numbers. They measure 1.25 in. by about .8, being thus rather narrowly elongate ; the smaller end is obtuse. They are not "whitish, spotted with dark brown," as Bonaparte and Nuttall state. The ground-colour is pale dull bluish-green, usually somewhat clouded with dull pale purplish, this tint being most noticeable where the markings, to be presently described, are thickest, and having an appearance of being washed out of the latter. The markings are curiously—even fantastically—distributed over the whole surface, but are commonly most numerous at or towards the larger end. These are of two kinds : one is a set of sharply-defined splashes, spots and dots ; the other consists of fine-drawn irregularly waved or

zigzag lines ; both are dark brown, sometimes almost black, but with a barely perceptible purplish tint. Other of each of these kinds of markings are obscure, seeming as if below, instead of upon, the surface. The line-tracery is far more abundant than the spotting, and mainly makes up the peculiar *pictura* of the egg, which singularly resembles some kinds of clouded dark-veined marble. Some of the lines wander vaguely over the surface unbroken for a long distance ; others are tangled in skeins, or tied up in knots, or coiled like cordage in miniature ; and no two eggs are alike in these respects. The earliest young appear late in May ; but the coming generation is not generally noticed until the latter part of June. Probably two broods are, as a rule, reared in each season ; and from the common circumstance of finding newly-fledged birds in September, it is to be inferred that three are not infrequently reared. For a little time before they essay on wing outside their leafy covert the young content themselves with scrambling about the vines near the nest, calling loudly for the food that it must be much labour to bring. Some time in August nearly all of both old and young birds are in flocks foraging over the marshes.

I am familiar with the general habits of all our well-founded* species of *Quiscalus* except *Q. macrurus*, which I have not seen alive ; and brief reference to some of their distinguishing features may make certain special tracts of the subject of the present article appear more prominently in the sequel.

Without exception, all our "Blackbirds" (of the genera *Agelaius*, *Xanthocephalus*, *Scolecophagus*, and *Quiscalus*) are eminently gregarious at most seasons ; but the strength of this "instinct of concentration" wanes with some during the breeding season, while it scarcely abates with others. As instances of the first-mentioned condition, we may cite the *Agelaii*, best represented by the common *A. phaniceus*, which ranges over the whole United States. This species is a regular migrant ; most individuals pass in spring to breed in or near the northern portions of the Union. At the mating-time the flocks break

* *Q. aglæus*, Bd. (= *Q. varitus*, Bd. olim, nec auct. ex Florida) and *Q. æneus*, Ridgway, from the Mississippi would be held by some for extremes of form of *Q. versicolor* (sive *purpureus*).

up and pairs scatter everywhere—every low meadow, moist briary tract, and reedy fen having one or more. So it is, also, with the two Pacific coast-species, *A. tricolor* and *A. gubernator*; but these, on account of their limited range and of the comparative scarcity of suitable breeding-places, are more crowded together, as it were, while breeding, and thus probably never wholly forsake the society of their kind. These three are “marsh” Blackbirds proper: they gather in countless numbers in the fall, and are found wherever reeds and rushes grow, fattening on the nutritious grain; *A. phæniceus* recognizes no bounds but those that are “writ in water.” They are mostly granivorous; insects form a large part of their food only while they await the ripening of a bountiful harvest.

X. icterocephalus is not far removed from the *Agelai*; but it tends toward the group I shall next notice, and in a measure represents the Purple Grackle of the eastern province in the western regions. It is the Blackbird of the prairie; we first meet it on the edge of the treeless country at the eastern limit of the central plateau; it seems one of the most trustworthy land-marks set up all over the grassy sea. It is always gregarious—quite as distinctly so during the breeding-season as at other times. I found it breeding in colonies in the marshes of New Mexico in June. It is perhaps less decidedly migratory than most of its allies.

The *Scolecophagi* are more independent of water than any of the others. Our two species exactly replace each other in respectively the eastern and the middle and western provinces. But there is a notable difference in their latitudinal dispersion. *S. ferrugineus* is more northern; it is rarely, if ever, seen in the United States in summer, as it passes beyond our limits to breed. I found it breeding in Labrador in July; it was not then in flocks nor even in companies, but scattered over the country in pairs or families, which seemed to have settled at random among the stunted conifers or other shrubbery that hides the mossy oozy ground. It “makes up” in flocks in August, and in this condition passes southward to winter. It visits ploughed fields, meadows, and pastures, spends much of its time on the ground, and, in the matter of food, seems to merit its technical

name. *S. cyanocephalus* is southerly; it returns to Mexico in winter. The summer is spent in the United States, where it arrives in flocks, which break up on reaching their destination, to breed*. It likewise is quite independent of water†, and in other respects is the counterpart of *S. ferrugineus*. Both these water-freed species, it should be observed, lay plain-spotted eggs, more resembling in *pictura* (though not in tint) those of the agrarian Starlings (*Sturnella*) than the singularly-limned ones that all our lacustrine and maritime species lay.

Turning now to *Quiscalus*, we find in this genus alone species that exhibit some of the leading characteristics of each of the other genera and have one superadded feature. The commonest example of the genus, *Q. versicolor*, corresponds in latitudinal range with *A. phæniceus*, breeding in eligible situations in the United States but not beyond—in longitude with *S. ferrugineus*, being restricted to the eastern province. Like the last, it is in the greatest measure independent of water, frequenting cultivated districts at a season when its depredations are most felt and most injurious to the agriculturalist; its scoleophagous nature, however, is not the less real because less conspicuous. It breeds, for the most part, in colonies, like the Yellow-headed Troopial; it may choose for a nesting-place trees that need not be near water. In restriction of geographical range alone, *Q. major* corresponds with the two western *Agelai*; in other respects, it is more widely differentiated from any of the birds we have considered than these are from each other. We have particularly to notice, then, what special modifications‡ appear as a consequence of its decidedly maritime conditions.

The Boat-tailed Grackle is preeminent in its family by its aquatic disposition; this is as well marked as it is in many or most *Limicola*. Besides feeding among the swaying reeds, upon

* The breeding-range of this species, as compared with that of its congener, corresponds with that of the western *Eremophila*, as compared with *E. cornuta* proper—and to the southward extension of certain prairie *Plectrophanæ*, as compared with *P. nivalis* and others.

† Thus I found it abundant in spring and fall on the pine-clad mountains of Arizona.

‡ Probably also shared by *Q. macrurus*, which seems to be the southward continuation of this maritime Blackbirdism.

the seeds of these plants, it descends to the sand-bars and mud-flats that the tide lays bare, and seeks, in the guise of a grallatorial bird, in company with Tattlers and Sandpipers, food to which most Blackbirds are strangers. As a rule, *Icteridæ* are tenacious of insectorial traits; one of which is to hop when on the ground, instead of bringing forwards each leg alternately; but the Boat-tail almost always walks. It would hop at a disadvantage in the softy oozy mud where most of its time, when it is not on wing, is spent—at a still greater in the shallow water, where it often wades. Its long strong legs are as well fitted for progression under these circumstances as its broad fan-shaped tail is for a balance when on bending rushes. However much grain it may gather from the bursting glumes of the reeds or glean from the ground below, however many soft corms of bulbiferous plants it may wrench up with its strong bill, the greater part of its food is of an animal nature. It feeds indiscriminately upon worms and little aquatic creatures of all sorts, particularly small mollusks and articulates*. A flock descends with raucous cries to a mud-flat where a region of those singularly unsymmetrical little crabs called “fiddlers” (*Gelasimus pugnator*) are hurrying to and fro in eager quest of food. Each bird marks its prey, breaks in a carapace at a blow, picks off the one great claw, too large for its throat, and swallows the body with the lesser legs still wriggling. They skurry to a bank of raccoon-oysters that just breaks the surface of the water, and feed eagerly upon the youngest ones, whose shells are still frail and delicate, as well as upon young mussels (*Modiola plicatula*), that lie anchored by the byssus to the rougher bivalves. They swoop down to a pool left by the retiring tide, where innumerable shrimps are disporting: these meet with like fate; for the birds wade boldly into the water, run nimbly about, up to their bellies, striking here and there, and at each blow transfixing an unlucky invertebrate. That they catch fish I cannot affirm, though I should not be surprised to learn that they did so. If

* Compared with other Blackbirds, the difference in diet is like that of *Corvus ossifragus* as distinguished from *C. americanus*, of *Procyon cancrivorus* as from *P. lotor*, and so forth. The specially littoral representatives of most inland genera furnish many such instances.

not, this is almost the only point wherein they differ in their food from the Rails and the Herons and other true waders with which they are thrown into intimate, if temporary, association and alliance. It has been to me a never-failing source of interest to watch these wading perchers, so truly aquatic in habit, brought into such close relations with birds to which they have no affinity; and watching them would bring unbidden the reflection, how beautifully Nature, in her wise economy, causes seemingly fortuitous circumstance to mould her few great types into many different shapes, to bend her few great aims to unnumbered purposes, to resolve her essential unity into endless diversity!

Fort Macon, North Carolina,
February 1870.

XXVI.—*On rare or little-known Limicolæ.*

By JAMES EDMUND HARTING, F.L.S., F.Z.S.

(Plate XI.)

[Continued from p. 213.]

I PROPOSED in my last paper, for the sake of convenience, to divide the rufous-breasted Plovers into two groups—those which in structure and habits resemble the Dotterels (*Eudromias*), and those whose affinities are with the Shore-Plovers (*Ægialitis*).

Having disposed of the former, I now proceed with the latter, and will try to bring together materials for a complete history, so far as possible, of the remaining two species, *Æ. geoffroyi* and *Æ. mongolicus*, whose general resemblance, as I before mentioned, both in summer and winter plumage, has led to their being frequently confounded.

5. *ÆGIALITIS GEOFFROYI.*

Charadrius asiaticus, Horsfield, Trans. Linn. Soc. xiii. p. 187 (1820); Tristram, P. Z. S. 1864, p. 450, *et* Ibis, 1867, p. 93 (*nec* Pall.).

Charadrius geoffroyi, Wagler, Syst. Av. fol. 4, p. 13, no. 19 (1827); Kittlitz, Kupfert. Vög. p. 26, pl. 34, fig. 2 (1833); Blyth, J. A. S. B. xii. p. 180 (1843); Heuglin, Ibis, 1859, p. 345; E. Newton, *op. cit.* 1863, p. 455, *et* 1866, p. 343; Blyth, *op. cit.* 1865, p. 34.

Charadrius leschenaulti, Lesson, Man. d'Orn. ii. p. 322 (1828); Swinhoe, J. A. S. B. xxix. p. 259 (1861); Layard, B. S. Afr. p. 299 (1867).

Charadrius griseus, Lesson, Tr. d'Orn. ii. p. 544 (1831).

"*Charadrius fuscus*, Cuvier," Pucheran, R. Z. 1851, p. 282.

Charadrius rufinus, Blyth, Ann. & Mag. N. H. xii. p. 169 (1843), et Cat. B. Mus. As. Soc. p. 262 (1849); Hodgson, Zool. Misc. p. 86 (1844).

Hiaticula geoffroyi, Rüppell, Syst. Uebers. p. 118 (1845).

Ochthodromus columboides, Reichenbach.

Hiaticula columbina, Lichtenstein, Nom. Av. Mus. Zool. Berol. p. 94 (1854).

Cirripedesmus [lege *Cirrhepidesmus*] *geoffroyi*, Bonap. Compt. Rend. 1856, p. 417.

Ægialites geoffroyi, Heuglin, Syst. Uebers. Vög. N. O. Afr. p. 56 (1856); Swinhoe, Ibis, 1863, p. 405; Jerdon, B. Ind. iii. p. 638 (1864).

Hab. Shores of Asia, and islands from Sea of Japan to the Red Sea, Malay Archipelago to Northern Australia, shores of Western Africa, and islands from Egypt to the Cape of Good Hope:—*a.* India (*Blyth, Jerdon*); Nepaul (*Hodgson*); Palestine (*Tristram*); Peninsula of Sinai (*Lord*); Red-Sea shore (*Kittlitz, Rüppell, Heuglin*); Abyssinia (*Blanford*); Zanzibar (*Kirk*); Seychelles and Mauritius (*E. Newton*); Madagascar (*E. Newton, Pollen & Van Dam*); South Africa, Cape Town (*Layard*). *b.* Japan (*Whitely*); China, Shanghai, Amoy, Formosa (*Swinhoe*); Philippines (*Cuming*); Sumatra (*S. Müller, Horner*); Borneo (*Diard*); Java (*Wagler, Horsfield, Kuhl, Van Hasselt*); Mortai and Gilolo (*Bernstein*); Ceram (*Forsten, Hoedt*); Amboyna, Ternate, Batjan (*Bernstein*); Flores, Timor (*Wallace*); New Guinea (*S. Müller*); Australia, Cape York (*Mus. J. Gould*).

DESCRIPTION.—*Adult, in summer.* Bill long and stout, blackish-brown; base of mandible ochreous flesh-colour; inside of mouth flesh-colour; tongue blackish at tip. Iris large and dark brown. Forehead white, with a black band above it reaching to the eye on each side; lore, space under the eye, and ear-coverts black; top of the head and nape of the neck pale ferruginous. Back, wing-coverts, and tertials hair-brown; the

feathers on the upper part of the back more or less tinged with rufous. Wing-coverts slightly tipped with white, forming a continuous bar of that colour, which is conspicuous in flight. Primaries almost black; the outer web of all, except the first five, mesially white; the shaft of the first pure white; the shafts of the others only mesially so. Tail-coverts hair-brown, approaching to white at the sides. Tail long and square, consisting of twelve feathers, pale hair-brown, the six middle feathers darkest in colour, the outermost on each side almost white, the tips of all white. Chin and throat pure white; across the breast a broad ferruginous collar, extending completely round the neck; the rest of the under parts, including the under wing-coverts and axillaries, pure white. Legs long and moderately slender, bluish-grey; toes and joints darker; claws black.

Adult, in winter. Bill as in summer; forehead white, with little or no trace of the black band which crosses it in summer; lore, space under the eye, and ear-coverts hair-brown. Top of the head, nape, back, wing-coverts, and tertials pale hair-brown. No trace of the ferruginous collar seen in summer, but a dusky hair-brown spot only on each side of the breast. The whole of the under parts, with this exception, pure white.

Young. Resembles to a certain extent the adult in winter, but with each feather on the upper portion of the plumage margined with pale buff, and in lieu of the pectoral band a buff spot on each side of the breast. The rest of the under parts from chin to breast pure white. Bill, legs, and toes lighter than in the adult.

Dimensions. Total length 8·5 inches; bill 1; wing, from carpus, 5·5; tarsus 1·4.

On glancing at the list of localities given above, it will be seen that the present species has a very extensive range; and it might be supposed in consequence that its history must be tolerably well known to ornithologists. The general resemblance, however, which this bird bears to other rufous-breasted Plovers, has led to its being confounded in turn with at least two distinct species of the same group. Moreover, although numerous isolated references to *Æ. geoffroyi* are to be found in various works, no attempt hitherto appears to have been

made to bring together any thing like a complete history of the bird.

The first published description of this species is that which was given by Wagler in 1827 (*ut suprâ*) under the name *Charadrius geoffroyi*, which, therefore, claims priority over the many others which have since been bestowed.

In 1828, Lesson, in his 'Manuel d'Ornithologie' (*loc. cit.*), described, as new, a Plover which had been brought from Pondicherry by M. Leschenault, naming it after that traveller. There is no doubt, from his description, that the species to which he referred was that which had been previously named by Wagler. He says,—“il est de la taille du Guignard [i. e. *Eudromias morinellus*]; mais ses jambes sont grêles et plus élevées, et son bec plus long et plus fort.” Now, not only is the long and remarkably stout bill one of the distinguishing characters of *Æ. geoffroyi*, but from the fact of both Wagler and Lesson referring to a specimen from Pondicherry in the Paris Museum*, it is more than likely that each took his description from the same type.

This explanation appears necessary, first, in order to decide whose name should have priority, and, secondly, in order to show that Lesson's description does not, as some have supposed†, apply to the allied but smaller species, *Æ. mongolicus*, next to be described.

Ægialitis geoffroyi is well known to naturalists in India as the Large Sand-Plover; and Dr. Jerdon says that it is found all over India in suitable spots, retiring northwards to breed in April and May. At other seasons of the year it frequents the sea-coast and the mouths of large rivers in considerable flocks. Mr. Blyth obtained specimens in Calcutta in May, which were in full summer dress; and in this plumage also were the birds procured by Mr. Swinhoe at Shanghai.

In his list of the Birds of Cashmere and Ladakh (P. Z. S.

* Lesson states that in the museum it bore the name of *C. griseus*, but adds significantly “non Lath.”

† *E. g.* Blyth, J. A. S. B. xii. pp. 180, 181 (1843); Degland & Gerbe, Orn. Eur. ii. p. 141; Jerdon, B. Ind. iii. p. 639; Adams, P. Z. S. 1859, p. 188, and Beavan, Ibis, 1867, p. 332.

1859, p. 188) Dr. Leith Adams states that *Charadrius leschenaulti* is common on the banks of the Chimouraree Lake, where it breeds. Hence it would be inferred that *Æ. geoffroyi* is the species intended. But in his 'Wanderings of a Naturalist in India,' the same author shows, by the measurement he gives, that it was the allied and smaller species, which he found, with its young, running along the pebbly side of the lake; for he says, p. 283, "An adult male measured in the flesh 7 inches. Forehead is black, with a white spot in front of the eye. A black band passes from the bill through the eye; throat and neck are white; breast and sides of the neck light rufous." Lesson's name, therefore, was misapplied to the bird, as Dr. Jerdon (B. Ind. iii. p. 640) has already remarked; for he says that it was the Lesser Sand-Plover (i. e. *Æ. mongolicus*) which Dr. Adams found breeding in Ladakh*.

Westward from India the present species extends through Palestine, where it was found in small numbers by Mr. Tristram (Ibis, 1870, pp. 207, 208). In the peninsula of Sinai, too, Mr. J. K. Lord procured specimens; and Kittlitz, Rüppell, and Dr. von Heuglin, all record its presence on the shores of the Red Sea. The last-named author states (Ibis, 1859, p. 345) that it is found on this coast throughout the year (doubtless a mistake), from as far north as Pelusium on the Mediterranean side; but he says nothing about its breeding.

Mr. Blanford, who accompanied the late expedition to Abyssinia, procured specimens of *Æ. geoffroyi* at Massowa, and at Zulla, in Annesley Bay; and Dr. Kirk has forwarded skins from Zanzibar†; so that the species would seem to be generally distributed along the entire length of the east coast of Africa. In South Africa, according to Mr. Layard, it is rare; for he only records a single specimen, killed on the Salt River near Cape Town in 1858. In Madagascar, on the contrary, it is common

* The late Mr. Strickland appears to have made the same mistake. All the specimens of *Æ. mongolicus* in his collection at Cambridge are labelled *Æ. leschenaulti*.

† This species is not included by Dr. Kirk in his list of the birds from the Zambesi region (Ibis, 1864, p. 331).

enough*; Mr. E. Newton found it in the Seychelles† and in Mauritius, from which last-named locality I have specimens, procured there by Mr. W. H. Power.

If we now trace the distribution of *Æ. geoffroyi* along the eastern shores of the Indian Ocean, it will be found to be pretty generally distributed from China and Japan, throughout the whole of the Malay archipelago, to New Guinea and Australia. On looking at the figure of Mr. Gould's *Hiaticula inornata* in the 'Birds of Australia,' I at one time thought with Professor Schlegel (Mus. P.-B. *Cursores*, p. 39) that the species referred to was *Æ. geoffroyi*. No measurements being given, I was led to this conclusion chiefly from the robust form of the bill in the figure. Mr. Gould, however, has recently shown me a skin of his species from Port Essington, which differs from the plate not only in plumage, being without the buff-coloured patch on each side of the breast (indicative of the first year's plumage), but also in not having the large bill which is depicted in the drawing. After carefully comparing this bird with skins of other allied species, there can be little doubt, I think, that it is *Æ. mongolicus* in winter plumage.

There is good reason, nevertheless, for including *Æ. geoffroyi* among the birds of Australia, although Mr. Gould has not yet done so. I have seen skins in winter plumage from Cape York, and it is not unlikely that, in North Australia at least, this species is a seasonal visitant.

On the sandy shores of Formosa, according to Mr. Swinhoe, our bird is abundant (*cf.* Ibis, 1863, p. 405); and from the fact of the young being found in the island, it is conjectured that the species breeds there. Nothing certain, however, with respect to its nest and eggs has yet been ascertained.

Like most of its congeners, it is gregarious, frequenting sandy shores and the mouths of large rivers. Dr. von Heuglin, who found this bird in the same locality with *Æ. mongolicus*, says (*l. c.*) that the two species kept in separate flocks. It need not

* Schlegel & Pollen, Rech. Faun. Madag. *Mamm. et Ois.* p. 129; E. Newton, Ibis, 1863, p. 455.

† Ibis, 1867, p. 343.

be supposed, however, that this habit is constant. There can be no doubt that where different species live on the same kind of food, they will consort together to procure it; and this is even the case with species belonging to different genera. Mr. Swinhoe (J. A. S. B. xxix. p. 240) procured a specimen of *Æ. geoffroyi* in Amoy out of a flock of *Æ. cantianus*; and the example before mentioned, obtained by Mr. Layard in South Africa, was accidentally killed from a flock of *Charadriidæ* and *Tringa*, feeding on a marsh; and "its stomach contained minute crustaceans, worms, and the insects found in these brackish waters." The stomachs of recently killed specimens examined by Mr. Swinhoe, in Formosa, were "lined with epithelia of a mud-colour, and filled with remains of small univalve mollusks and crustacea" (Ibis, 1863, p. 405). The period at which the breeding-plumage begins to be assumed varies considerably, and cannot be said to depend upon locality. Mr. Blanford procured a specimen at Zulla, Annesley Bay, which had acquired the rufous pectoral band on the 23rd January, while another, obtained a week earlier on the same coast, exhibited no signs of change from the winter plumage. An adult male and female, killed in Ceram on the 17th of April, were in full plumage, while a second male, killed at the same time and place, had no black on the forehead. At Calcutta and Shanghai, Messrs. Blyth and Swinhoe respectively found that this bird had fully acquired its summer dress in May; while an adult male shot by Mr. Lord on the 23rd of that month at Tor, in the peninsula of Sinai, had no trace of black upon the cheeks or forehead, and only a faint tinge of buff across the breast*.

† 6. *ÆGIALITIS MONGOLICUS*† (Pallas).

Charadrius mongolus, Pallas, Reise, iii. p. 700 (1776); Latham,

* Messrs. Jerdon and Swinhoe (*l.c.*) have characterized this as "the largest species of the genus" *Ægialitis*; but they have overlooked the American Kildeer Plover, *Æ. vociferus* (Linn.), which, although possessing a somewhat shorter bill and tarsus than *Æ. geoffroyi*, exceeds it considerably in total length and expanse of wing. The relative measurements of *Æ. vociferus* are—total length 9·7, bill ·8, wing from carpus 6·5, tarsus 1·3.

† I retain this, as though not the oldest spelling of the word, it is possibly the more correct.

Syn. iii. pt. i. p. 207 (1785), *et* Ind. Orn. ii. p. 760 (1790); Gmelin, Syst. Nat. i. p. 685 (1788).

Charadrius mongolicus, Pallas, Zoogr. R.-A. ii. p. 136 (1811); Middend. Sib. Reis. ii. 1, p. 211, taf. xix. figs. 2, 3 (1853); Schrenck, Reis. Amur-Lande, p. 411 (1860); Radde, Reis. S. O.-Sib. ii. p. 324 (1863); Schlegel, Mus. P.-B. *Cursores*, p. 41 (1865).

Charadrius cantianus, Horsfield, Trans. Linn. Soc. xiii. p. 187 (1820).

Charadrius cirrhepidesmus, Wagler, Syst. Av. fol. 4, p. 13, no. 18 (1827); Heuglin, Ibis, 1859, p. 345.

Charadrius gularis, Wagler, *op. cit.* fol. 5, p. 5, no. 40.

Charadrius sanguineus, Lesson, Man. d'Orn. ii. p. 330 (1828), *et* Tr. d'Orn. p. 544 (1831).

"*Charadrius ruficollis*, Cuvier *et* Temm." Pucheran, Rev. Zool. 1851, p. 282.

Charadrius rufinellus, Blyth, Ann. & Mag. N.H. xii. p. 169 (1843).

Charadrius subrufinus, Hodgson, Zool. Misc. p. 86 (1844).

"*Charadrius pyrrhorthorax*, Temm.," Gould, B. Eur. pl. 299 (1837); Bp. Comp. L. B. E. & N. Am. p. 45 (1838); Temm. Man. d'Orn. 2nd ed. iv. p. 355 (1840); Schlegel, Rev. Crit. pt. ii. p. 95 (1841); Bree, B. Eur. iv. p. 18 (1862); Tristram, P. Z. S. 1864, p. 450, *et* Ibis, 1868, p. 323.

Ægialitis pyrrhorthorax, Keyserl. & Blas. Wirbelth. Eur. p. 70 (1840); Jerdon, B. Ind. iii. p. 639 (1864); Beavan (*fide* Tytler), Ibis, 1867, p. 332; Von Pelzeln, *op. cit.* 1868, p. 321.

Hiaticula inconspicua, Lichtenstein, Nomencl. Av. p. 94 (1854) (*descr. null.*).

Hiaticula inornata, Gould, B. Austral. vi. pl. 19.

Charadrius ruficollis, Heuglin, Syst. Uebers. Vög. N.-O.-Afr. p. 56 (1856).

Pluviorhynchus mongolus, Bonap. Compt. Rend. 1856, p. 417, *et* Cat. Ois. d'Eur. p. 14 (1856).

Cirrhepidesmus pyrrhorthorax, *Id.* Compt. Rend. (*l. c.*).

Charadrius inornatus, G. R. Gray, Cat. B. N. Guinea, p. 51 (1859).

Charadrius leschenaulti, Adams, P. Z. S. 1859, p. 188, *et* Wand. Nat. India, p. 283 (1867) (*nec* Lesson).

Ochthodromus inornatus, Gould, Handb. B. Austral. ii. p. 237 (1865).

Charadrius mongolicus, Degl. & Gerbe, Orn. Eur. ii. p. 141 (1867); Blyth, Ibis, 1867, p. 164.

Hab. Mongolia (*Pallas, Radde*); Siberia, Ochotsk (*Middendorff*); Thibet, Ladakh (*Adams*); Kiangsisa (*Stoliczka*); Nepal (*Hodgson, Brandt*); India (*Blyth, Jerdon*); Andaman Isles (*Tytler*) (?); Choris Peninsula (*Moore*); Amoor (*Von Schrenck*); China, Shanghai, Hainan (*Swinhoe*); Philippines (*Cuning*); Malay Archipelago (*Müller, Wallace*); Oomago Island, Torres Straits (*Ince*); Australia (*Gilbert*); Russia, St. Petersburg (*Temminck*); Palestine, mouth of Kishon (*Tristram*); Kordofan, Danakil Country (*Heuglin*).

DESCRIPTION.—Similar both in summer and winter plumage to the last-described species, but differing in size, being considerably smaller. The bill, also, is shorter, has the outline of both mandibles straighter, and is of a dark horn-colour; the iris dark yellow-brown; tarsus dull yellowish-grey (*Middendorff, l. c.*).

Dimensions. Total length 7·3 in.; bill ·7; wing from carpus 5; tarsus 1·3.

Before entering upon any other details, it may be thought necessary that I should state the reasons which have induced me to add *Æ. pyrrhothorax*, Temm., to the list of synonyms of the present species; for the propriety of so doing is not generally admitted.

Dr. von Middendorff considered *Æ. pyrrhothorax* to be distinct, probably regarding it as the western or European representative of the Asiatic *Æ. mongolicus*. But he does not point out any distinguishing characters; and perhaps, at the date of the publication of his work, he was not acquainted with the history of Temminck's so-called species. Be this as it may, his description and plate, compared with the descriptions of Pallas and Temminck, show that all three are referable to one and the same species, to which Pallas's name, having priority, must be applied.

Mr. Blyth has expressed the opinion (Ibis, 1867, p. 164) that *Charadrius pyrrhothorax*, Temm., should be erased from the list

of synonyms of *Æ. mongolicus* (Pallas) "the North-African species in summer dress having no white on the forehead, and less rufous on the breast." From this remark it might be inferred, first, that Temminck took his description from a North-African specimen, and, secondly, that the Asiatic form invariably has white on the forehead. Neither inference would be in accordance with the facts; and, unwilling as I am to dissent from so high an authority as Mr. Blyth, I think I shall be able to show that *Æ. pyrrhothorax* (Temm.) is identical with *Æ. mongolicus* (Pallas), and that the differences in plumage which are observable in different specimens, and have led to the supposition that the two names belonged to two species, are such only as are easily referable to age and to the particular season of the year at which the specimens were obtained.

The bird described by Temminck in his 'Manuel' (*ut suprâ*), and through his instrumentality figured by Mr. Gould in his 'Birds of Europe,' was killed in the neighbourhood of St. Petersburg, having strayed thither, in all probability, from Asia. Both the description and plate show that in this specimen the forehead is black and white, in this respect, as in every other, agreeing with the description given by Pallas, both in his 'Reise' and 'Zoographia.' The measurements given by both authors, too, confirm the impression that they both referred to the same species. What, then, is the species referred to by Mr. Blyth, which he would confine to North Africa, and call *Æ. pyrrhothorax*, Temm., and of which he says that it has no white on the forehead in summer? There is a specimen in the British Museum from Egypt which answers to his description; and this, as he informs me, suggested his remark which I have quoted. I have recently examined the type-specimen of *C. pyrrhothorax* in the Leyden Museum. This is labelled "♂. St. Petersburg, Brandt; individu type du *Charadrius pyrrhothorax* (*mongolicus*) Temm.;" and although at first sight it appears to have no white on the forehead, as indicated by the plate and description, an examination shows that the tips only of the frontal feathers are black, the bases being white, indicating the change to winter plumage. Dr. von Schrenck described a specimen with black forehead, from the Amoor; and I have in my own

collection a similar specimen from Calcutta, labelled "*Hiaticula mongolica*, summer dress, Calcutta," in Mr. Blyth's handwriting. Two examples, procured in June in New Guinea, are in the Leyden Museum, one of which has the forehead black; the other black bordered with a few white feathers. I have seen others also from India in which the forehead was black, or almost black, showing that black-fronted birds are not confined to North Africa, where, in fact, the species in any plumage is rare. But in most of these, although the forehead may fairly be called black, there is a faint indication of a white line dividing the black frontal band. In winter all trace of black about the head entirely disappears; and between winter and summer plumage, a large series shows every possible gradation from pure white to coal-black. Dr. Pucheran, in identifying "*C. ruficollis*, Cuv.," with the present species, mentions (*loc. cit.*) the variation observable in the frontal band. I am not prepared to say that the black forehead indicates the full summer plumage, but rather incline to consider it exceptional*. I have seen but few specimens in which the forehead was really uniformly black; and in a large series of skins examined, which in other respects appeared to have completed their summer plumage, the majority certainly had the forehead black and white.

But whatever may be said of the black-fronted bird, there can be no doubt, for the reasons above stated, that *C. pyrrhothorax*, Temm., must stand as a synonym of *C. mongolicus*, Pallas.

The claim of this species to a place in the European avifauna rests solely, so far as I am aware, upon the solitary instance recorded by Messrs. Temminck and Gould of its occurrence near St. Petersburg. It is really an Asiatic species, ranging much further towards the north than *Æ. geoffroyi*, and found scarcely so far southwards in winter. Pallas fixed its home in Mongolia, or, rather, on the confines of the Mongol territory. He found it in the neighbourhood of salt-lakes between

* A specimen of *Eudromias morinellus* in my collection differs from the ordinary type in having the forehead *from the base of the bill and gape*, as well as the crown and nape, sooty-black, a case analogous to that of the black-fronted *Æ. mongolicus*.

the rivers Onon and Argun; and, identifying it with the *C. mongolus* of his former work, he enters into a very full description of it in his 'Zoographia,' altering his specific name to *mongolicus* (*ut suprâ*). Dr. von Middendorff fell in with this bird in large flocks about the 30th of June, at the mouth of the Uda, on the Sea of Ochotsk. These flocks were observed up to the 21st of July, without his meeting with any paired or breeding birds; and on closer inspection it was found that they consisted chiefly of females. As might be supposed from the date, they were all in summer-plumage. In a freshly killed bird, the bill was dark horn-colour, the iris dark yellow-brown, tarsus dull yellowish-grey, the toes scarcely lighter than the iris, and the soles a little darker. He further remarks that a wounded bird swam and dived well.

Herr Radde states (*l. c.*) that he met with this handsome species in the north-east corner of Mongolia as rarely as Pallas did. It made its appearance at Tarei-nor in a flock of about fifty, but not until the 12th of May. The birds at that time were extremely wild, flying low along the shore, performing graceful evolutions, without uttering any note. An old male killed from this flock corresponded, in his opinion, very well with the bird figured by Dr. von Middendorff. In no other part of the south of Eastern Siberia did he find it. Dr. von Schrenck describes this species from the Amoor with the forehead black.

The most northern locality which I have hitherto noted for *Æ. mongolicus* is the Choris Peninsula in Behrings Straits. Two specimens in summer plumage were procured there by Capt. Moore, of H.M.S. 'Plover,' in 1849, and came into the possession of Mr. Barrow, who recently presented them, with the rest of his collection, to the New Museum at Oxford. Herr Stoliczka (*ut suprâ*) met with this species in Thibet; and, as I have remarked in treating of the preceding species, Dr. Leith Adams (*loc. cit.*) has recorded it under the name of *C. leschenaulti*, as breeding on the banks of the Chimouraree Lake in Ladakh. It is well known to naturalists in India as the Lesser Sand-Plover. Mr. Hodgson included it in his catalogue of the Birds of Nepâl; and Mr. Blyth states that it is commonly brought into the Calcutta market and may be procured there

in the month of May in full summer plumage. Dr. Jerdon obtained it "in the Carnatic, at Madras, on the Malabar coast, and elsewhere also, but more rarely, and seldom far inland."

I am indebted to Mr. Swinhoe for the loan of specimens from Shanghai and Hainan in various stages of plumage. One of these, apparently in full summer-dress, was procured at Shanghai in May. It corresponds in every way with the descriptions given by Pallas, Temminck, and Middendorff, and with the plates of the latter and Gould. Mr. Swinhoe is inclined to think that it may be found in Northern Japan* (Ibis, 1863, p. 444). Specimens from the Philippines, brought home by Mr. Cuming, are in the British Museum. One of these, in summer plumage, accords with the usual Indian type, and has the forehead black and white.

The late Lieut. Beavan (*ut suprâ*) included it with some hesitation in his "Avifauna of the Andaman Islands," referring to it as the Lesser Sand-Plover, *Æ. pyrrhothorax* (Temm.), but erroneously adding as a synonym *C. leschenaulti*, Less.

The *Charadrius cantianus* of Horsfield, from Java, is *Æ. mongolicus* in winter plumage. It appears to be pretty generally distributed throughout the Malay Archipelago; Mr. Wallace brought home some skins from several of the islands, including the Aru group. I have already stated my reasons for believing that *Hiaticula inornata*, Gould, like Horsfield's *C. cantianus*, is the present species in winter dress. If the bird from New Guinea, referred to by Mr. G. R. Gray as *Charadrius inornatus* (*ut suprâ*), be identical with the bird which Mr. Gould showed me as his *inornata*, then we may add, to the list of localities for *Æ. mongolicus*, New Guinea† and Oomago Island, Torres Straits. The southernmost limit at present recorded for this species is Port Essington, in North Australia. Here it

* Capt. Blakiston has in fact included it amongst the Birds of Northern Japan (Ibis, 1862, p. 330), but evidently in error, as appears by his note, which is as follows:—"A female specimen of the Eastern Golden Plover, was shot in September." The species to which he referred was, of course, *C. longipes*.

† Since writing this I have seen several examples from New Guinea in the Leyden Museum.

appears to be a winter visitant, and, according to Mr. Gould (Handb. *ut suprâ*), it was found by Mr. Gilbert abundantly on most of the sandy points and bays. "The stomachs of those dissected," it is added, "contained the remains of small crustaceous animals and a large portion of sand."

In the work just quoted it will be observed that Mr. Gould has substituted the name of *Ochthodromus inornatus* for the *Hiaticula inornata* of his folio publication, associating it with the *Ochthodromus wilsoni* of America, and taking it out of the Ring-Plover group (*Ægialitis*, Boie, *Hiaticula*, Gray). I cannot help thinking that his former name might have been very properly retained; for not only in plumage (especially in the forehead-band, and pectoral band), but also in general structure and habits, the present species is a true Ringed Plover.

Bonaparte has placed it in two distinct genera! In the adult plumage he has associated it with *C. obscurus*, Gmelin, in his genus *Pluviorhynchus*; whilst the same species in immature garb constitutes the type of his genus *Cirrepidesmus*, which was doubtless founded upon the *Charadrius cirrhepidesmus* of Wagler.

Slender as is the claim of this species to be included amongst the Birds of Europe, it has scarcely a better title to be considered African. Straying through Palestine, where Mr. Tristram (*ut supra*) found it in winter on the banks of the Kishon, it has been observed in Kordofan, on the Red-Sea shore, by Dr. von Heuglin (*loc. cit.*). Rüppell, however, does not include it in his list of North-East African species. With the exception of the single example in the British Museum, I have seen no skins from Egypt, and have looked for it in vain in many collections from the Nile. Mr. Blanford did not meet with it in Abyssinia; and although Dr. von Heuglin records it from Tajurrah, in the Danakil country (*ut suprâ*), I am disposed to regard its visits to Africa as only occasional in winter. It is not recorded from South Africa, nor from Madagascar, where its congener, the preceeding species, is common in winter.

The habits of the two birds, however, are similar, although their geographical range is not coextensive. Gregarious throughout the greater portion of the year, *Æ. mongolicus* appears to pair very late. It is rather remarkable that none of the Russian

travellers met with its nest; and it is to be regretted that Dr. Leith Adams, who discovered one of its breeding-haunts in Ladakh, was not enabled to describe the eggs, the young being already hatched when he made the discovery.

XXVII.—*Notes on some of the Birds inhabiting the Province of Auckland, New Zealand.* By Capt. F. W. HUTTON.

FALCONIDÆ:—*Hieracidea novæ-zelandiæ* is not uncommon, but rarely seen, as it inhabits the bush. *Circus assimilis*, on the contrary, is very numerous. In the old bird the cere and base of the bill are whitish-blue, and the irides sulphur-yellow, while in the young the cere is yellow and the irides hazel. It breeds in swampy places and in cultivated districts, sometimes in corn-fields. The nest is composed of a few pieces of stick rudely put together. Egg ovoid, white, with some spots of pale brown, something like that of a Turkey. Length 1·75 in., greatest breadth 1·4 in.

ALCEDINIDÆ:—*Halcyon vagans* is common; it breeds in holes in the banks of streams, and lays five white eggs: length 1·1 in., breadth ·9 in.

MELIPHAGIDÆ:—*Prosthemadera novæ-zelandiæ* is common. Irides hazel. Both this bird and *Anthornis melanura*, beside their loud liquid notes, sing a varied song in a very low tone, as if to themselves. The latter makes a nest, loosely put together, of small twigs, roughly lined with grass and lichens. The eggs are white, more or less spotted with rusty: length ·85 in., breadth ·65 in. Irides crimson. Legs and feet slate-blue. It is common on the Great and Little Barrier Islands, but becoming very rare on the mainland. *Pogonornis cineta* is also abundant on the Little Barrier, not uncommon on the Great Barrier, but, I believe, quite extinct on the mainland of this province. Its irides are black.

CERTHIIDÆ:—*Acanthisitta chloris* is found in the wooded hills of the Great and Little Barrier Islands. It runs up the trunks of the trees like a Tree-Creeper, and picks insects out of the bark. I have also seen *Anthornis melanura* do the same.

The note of *A. chloris* is a small weak cheep. *Mohoua albigilla* is common in the forest, but generally keeps in the tops of the trees. Its note is something like that of the Yellow Hammer, but without the last long note. Its nest is made of moss, grass, and the bark of *Leptospermum*, and lined with grass and the hairs from the young fronds of tree-ferns.

LUSCINIIDÆ:—*Gerygone flaviventris* is common, and has a sweet little song. Irides crimson, bill black, legs and feet brownish-black. Nest oval, with an opening at one side near the upper end, composed of moss, feathers, grass, fresh-water *Algæ*, wool, &c., and lined with feathers, grass, and fern root-lets*. Its length is 3 or 4 inches, with a breadth of 2 inches. *Petræca toitoi* and *P. longipes* are both common in the bush; the note of the latter somewhat resembles that of a Canary, but is not so loud, nor so varied. *Anthus novæ-zelandiæ* is the commonest native bird, and appears to increase with cultivation. Its nest is built on the ground, of fern, lined with grass. Eggs yellow-grey, spotted with brown and grey: length .9 in., breadth .7 in.

MUSCIPIDÆ:—*Rhipidura flabellifera* is very common. It has no pretensions to be called a songster, having nothing but a harsh chirp. Nest about 2.5 or 3 inches in diameter, and the same or less in height, composed of grass, moss, and bark of *Leptospermum*, and lined with hair, grass-culms, fruit-stalks of moss (*Bryum*, *Trichostomum*, &c.). Eggs white, with brown spots or blotches, often forming a ring, near the thick end: length .65 in., breadth .5 in.

STURNIDÆ:—*Creadion carunculatus*:—A nest of this bird, which Mr. Kirk and myself found on the Little Barrier Island, was about two feet down the hollow stem of a dead tree-fern whose top was broken off. It was roughly composed of stems of *Hymenophyllum* and dead fibres of *Areca sapida*, and lined with the fine loose bark of *Leptospermum*. The eggs were three in number, white, spotted with brownish-grey and violet near the thick end: length 1.15 in., breadth .9 in.

PSITTACIDÆ:—Both *Platycercus novæ-zelandiæ* and *P. auriceps* are found in the province, although not very common on

* I have never seen the porch described by Mr. Buller in his 'Essay.'

the mainland. The egg of one of the species is polished white, oval: length $\cdot 95$ in., breadth $\cdot 75$. *Nestor meridionalis* is common, and feeds much on honey at certain seasons of the year.

CHARADRIIDÆ:—*Charadrius obscurus* is common on the coast, but never goes inland. It turns up the seaweed and catches the sandhoppers underneath. *Anarhynchus frontalis* is occasionally shot; when young, it is greyish-brown on the back, and white below, with a greyish-brown band on the throat. The bill is always bent the same way. Dr. Finsch must surely be wrong in calling this bird a *Hæmatopus*. *Thinornis novæ-zelandiæ* is found at the Great Barrier Island, and on the edges of Lake Rotorua. Irides dark; bill orange, with a black tip; a thin line of orange-coloured flesh round the eye; legs and feet flesh-colour, nails black.

ARDEIDÆ:—*Ardea novæ-hollandiæ* has been shot in the Manukau Harbour*.

SCOLOPACIDÆ:—Notwithstanding Dr. Finsch's strongly pronounced opinion, I am inclined to doubt the specific identity of *Himantopus novæ-zelandiæ* and *H. melas*. The former is a common bird in the southern parts of this province, while the latter is very rare. At the hot lake of Roto-mahana *H. novæ-zelandiæ* (erroneously called Oyster-catcher, *Hæmatopus picatus*, by Dr. Hochstetter) abounds, and remains there all the year round, while the natives assured me that *H. melas* was only occasionally seen, and that it came from the sea. Because *H. novæ-zelandiæ* when young may have more black feathers on it than when old, it does not therefore follow that *H. melas* is the young of *H. novæ-zelandiæ*; and it certainly is not the male, or the natives would have seen them paired at Roto-mahana. *H. melas* appears to be a smaller bird, but with a larger bill.

RALLIDÆ:—*Ortygometra affinis*:—Irides red; bill, legs, and feet brownish-green, the bill being the lightest. *O. tabuensis*:—Irides brick-red; legs and feet pale red; bill black; flesh round the eye brick-red. Common in the Waikato swamps, but not easily seen. *Porphyrio melanonotus*:—Egg yellowish-white or buff with reddish spots, principally on the larger end: length $2\cdot 1$ in., breadth $1\cdot 5$ in. *Rallus assimilis*:—Egg pinkish-white

* [Vide antea, p. 135.—ED.]

or cream-colour with red-chestnut spots, principally on the larger end: length 1·5 in., breadth 1·2 in.

ANATIDÆ:—*Anas superciliosa*:—Both sexes are alike, but the feet and legs of the male are of a dirty orange with dusky spots on the webs; and those of the female dirty yellow-ochre. Irides of both brown. Bill greenish-blue, with black nail and an irregular black mark below the nostrils; the base of the lower mandible is also black. Egg yellowish-white: length 2·35, breadth 1·75 in. *Spatula variegata*:—Male. Irides yellow, legs, feet, and membranes bright yellowish-orange; nails brown; bill blue-black. Female. Irides yellowish-hazel; feet and legs dull yellowish-ochre; membranes dusky; bill greenish-grey, darkest near the tip; lower surface of lower mandible yellow ochre. *Fuligula novæ-zelandiæ*:—Male. Irides yellow; bill ash-blue, tipped with black; legs and toes grey; membranes black, bordered near each toe with grey. Female. Irides brown; bill bluish-black; legs and feet as in the male.

Nyroca australis, Gould, is not uncommon on the lakes in the interior of the island. Male. Head, neck, and breast dark reddish-brown; back dark brown, each feather on the upper part tipped with greenish brown; sides brown, each feather tipped with yellowish brown; upper abdomen white, lower abdomen brown; lower tail-coverts white; under wing-coverts white, upper brown with green reflections; wing-feathers white, tipped with dark brown, outer webs of first four primaries brown; tertials brown with green reflections; tail brown; irides white; bill black, with a dark slate-blue band at the tip; front of tarsi very light grey, behind darker; toes very light grey; membranes black, bordered with light grey on the side of each toe. Length 20 inches, wing from carpal joint 8·5 in., bill from gape 2·25 in., tarsus 1·5 in. Windpipe swollen.

Female. Head, neck and breast russet-brown, speckled with white on the throat, and with black on the breast, darkest on the top of the head; back and sides as in the male; upper abdomen dirty white, lower brown; tail and wings as in the male, but the white of the primaries shaded with brown; irides light brown; bill greenish-grey, tipped with slate blue, lower mandible greyish-blue; legs and feet as in the male. Length 19

inches, wing from carpal joint 8·5 in., bill from gape 2 inches, tarsus 1·375 in.

SPHENISCIDÆ:—*Eudyptes pachyrhynchus* has been taken in the Bay of Plenty, and in the Bay of Islands. *Spheniscus minor* breeds in holes, laying two yellowish-white eggs. Length 2·1 in., breadth 1·6 in.

PROCELLARIIDÆ:—The following members of this family must be added to Dr. Finsch's list of New-Zealand Birds:—

Adamastor cinereus (Gmel.).

Fregetta melanogastra (Gould).

Procellaria nereis (Gould).

Æstrelata lessoni (Garnot).

Prion turtur (Kuhl).

I am doubtful whether *Procellaria æquinotialis* should be admitted into the list.

LARIDÆ:—*Larus melanorhynchus* (Buller, Ibis, 1869, p. 43) is found on Lake Tarawera, in the interior of the island. *L. antipodum*:—Egg brown, blotched all over with darker, oval: length 3 inches, breadth 1·85 in. *L. scopulinus*:—Egg lighter, almost white, with dark, nearly black spots, ovoid: length 2·4 in., breadth 1·65 in.

PELECANIDÆ:—*Sula serrator* breeds on a small island near the Great Barrier. Egg dirty white, oval: length 3 inches, breadth 1·85 in. *Graculus varius* breeds in trees. Egg bluish-white, rough, oval: length 2·4 in., breadth 1·5 in. On the sea-coast the commonest Cormorants are *G. varius* and *G. brevirostris*; and in the Firth of the Thames *G. punctatus*. *G. carboides* and *G. melanoleucus* are also occasionally found. On the Waikato and inland lakes the commonest are *G. carboides* and *G. brevirostris*; *G. melanoleucus* and *G. varius* are also not uncommon. I should call *G. varius* and *G. punctatus* sea-birds, and *G. carboides* and *G. melanoleucus* freshwater birds, while *G. brevirostris* belongs equally to both.

The following birds have been introduced into the province, and, as I know from personal observation, have bred in a wild state.

Gymnorhina tibicen.

Turdus musicus.

„ *merula*.

Sturnus vulgaris } becoming very numerous.
Fringilla cælebs }

„ *cannabina*.

„ *chloris*, becoming common.

Pyranga rubra, bred three times the first year.

Passer domesticus, getting very numerous.

Alauda arvensis.

Two small Finches from Queensland, the names of which are not known to me, are getting common.

Ortyx californicus. Very numerous in some places. Dr. Finsch apparently quotes me as stating that *O. virginianus* was common here. There must be some mistake about this, as, to the best of my knowledge, *O. virginianus* has never been introduced*.

Phasianus colchicus. Common about Monganui in the north, but does not spread much. Introduced twenty years ago.

Phasianus torquatus. Abundant from Auckland to Lake Taupo, but not in the forest-land of the north. Originally thirteen birds were introduced about sixteen years ago.

Perdix cinerea.

Turtur risorius. Too tame to increase in a wild state.

Cygnus olor.

Chenopsis atrata.

The following birds have also been turned out; but I am not sure whether they have bred or not.

Sylvia cinerea (three examples), *Erythacus rubecula* (two cocks and a hen!), *Fringilla carduelis*, *F. canaria*, *Emberiza citrinella*, *Agelæus phæniceus*, *Sturnella ludoviciana*, two species of Quail from Australia and one from Tasmania, *Perdix petrosa*, *Talegallus lathamii*, *Phaps chalcoptera*, *Leucosarcia picata*, *Chenalopecæ ægyptiaca*, and *Cereopsis novæ-hollandiæ*.

The other birds that I know to be found in the province, but not previously mentioned in these notes; are—

Athene novæ-zelandiæ. Common.

* [Capt. Hutton's letter (Ibis, 1867, pp. 378, 379) is no doubt the authority for Dr. Finsch's statement.—ED.]

Sphenæacus punctatus. Common. It has a loud, liquid, single note, and a sharp alarm-cry.

Certhiparus novæ-zelandiæ.

Zosterops dorsalis. Common.

Callæas cinerea. In forest-covered hills.

Eudynamis taitensis.

Chrysococcyx lucidus. } Common in summer.

Strigops habroptilus. Probably still exists in the neighbourhood of Pirougia and Mokau.

Carpophaga novæ-zelandiæ. Common in the bush.

Coturnix novæ-zelandiæ. Rare.

Charadrius bicinctus.

Hæmatopus longirostris.

„ *unicolor*.

Limosa novæ-zelandiæ. Abundant on the sea-shore.

Ardea flavirostris. Rare; one used to frequent the Wade, about ten miles north of Auckland, a year ago. I do not know whether it has been shot yet.

Ardea matook. Generally near the sea.

Botaurus pæcilopterus. Common.

Ocydromus earli. Rare in the north, more abundant in the centre and south of the island.

Casarca variegata. Occasionally in the southern parts of the province, common further south.

Anas chlorotis. Not uncommon.

Hymenolæmus malacorhynchus. On the top of Pirougia, and the upper Mokau.

Podiceps rufipectus. Common in Waikato.

Sterna strenua.

„ *frontalis*. Abundant, perhaps a migrant from Australia.

Appteryx mantelli. Not uncommon in places.

XXVIII.—*Stray Notes on Ornithology in Indian.*

By ALLAN HUME, C.B.

No. V. *Emberiza striolata* (Lichtenstein).

It was when travelling through Rajpootana in March and April 1868, that I first met with and identified the Striolated Bunting, until that time unknown in India*. I procured a few specimens both on the Taragurh Hill at Ajmere and at Mount Aboo; but I was travelling too rapidly to learn much, either of the haunts or habits of the species.

Later in the year my friend Mr. Brooks procured specimens of the same species in the Etawah district; and now recently, while detained at Ajmere for the purpose of negotiating a treaty with the Jodhpoor Government, I have obtained numerous specimens and had ample opportunities of observing this pretty little bird, not only on Taragurh, but on all the bare rocky hills and ranges of the Aravallis (to which hill-system Mount Aboo also belongs) that I have yet visited.

First brought to the knowledge of naturalists by Rüppell, who found it in Nubia and figured it in his 'Atlas' (Vögel, Taf. 10, a), it has subsequently been met with in many parts of Northern Africa, Abyssinia, and Algeria, and is said to be not uncommon in the south of Spain.

Hitherto, so far as I am aware, no authentic account of its nidification and eggs or details of its habits has appeared; and some little interest may therefore attach to the observations on these points that I have recently made.

The Striolated Bunting is a permanent resident of the western and central portions, at any rate (I have not yet observed it on the northern), of that broad belt of bare rocky hills, mounds, and parallel detached ranges which, under the names of the Inewat and Aravalli Hills, run down from Delhi, and passing through or near Ulwur, Bhurtpoor, Jaipoor, Ajmere, Pali, and Serohie, culminate in Mount Aboo (the highest of the whole series), which attains an elevation of 5500 feet above the level of the sea. These hills, running through and being studded about on an elevated sandy tract varying from 1000 to 1700 feet

* See Ibis, 1869, p. 355.

above the level of the sea, rise from 200 to 1200 feet above the surrounding plain, few, if any (except Mount Aboo), much exceeding in height the Taragurh Hill at Ajmere, which is said to have an elevation of 2900 feet.

This chain, so far as I am acquainted with it, is composed almost exclusively of metamorphic rocks,—granite, greenstone, micaceous schists, syenite, and quartz, with various altered sandstones, being the characteristic minerals, though patches of limestone and marble are quarried more or less in many localities. Very bare, bleak in winter and burning in summer, these hills, often conveying the idea of huge barrows of rocky *débris*, can boast scarcely any vegetation, except multitudes of huge candelabra-like, many-thorned, succulent *Euphorbiæ*, and a more or less sparse growth of lanky ghost-like grass, which always appears withered and dead. Wrapt in the hues of distance, these rugged and often very fantastically shaped hills and groups of hillocks afford the most beautiful backgrounds to every view, and give an inexpressible charm to every landscape, especially to those fresh from the rich but unvaryingly level plains of the rest of Upper India. Seen, however, close at hand they are bare, and in many cases desolate to a degree; and they are, in their sameness and churlish ruggedness, as wearying and discouraging to the traveller as they are, with rare exceptions, unproductive to the ornithologist.

A few pairs of the beautiful Banded Rock-Grouse (*Pterocles fasciatus*), of the Jugger-Falcon (*Falco juggur*), of the Brown Rock-Chat (*Cercomela fusca*), and of the Red-winged Bush-Lark (*Mirafra erythroptera*), with large companies of the Long-billed Vulture (*Gyps indicus*), all of which breed here, together with numbers of the Striolated Bunting, almost complete the catalogue of the resident avifauna, supplemented during the cold season by little flocks of Hutton's and Stewart's Buntings (*Emberiza huttoni* and *E. stewarti*) and solitary individuals of our well-known Pipit (undistinguishable from *Pipastes arboreus* of Europe), the Brown Rock-Pipit (*Corydalla griseorufescens*, nobis*), and the Common Kestrel (*Tinnunculus alaudarius*).

Dreary and uninteresting as they seem to us, these great

[*Cf. antea*, p. 286.—ED.]

stoncheaps (the best possible name for many of them) are the homes *par excellence* of the Striolated Bunting. Everywhere a dwarf withered grass peeps out in yellow tufts amongst the particoloured fragments, and furnishes the tiny seeds which, so far as my observations both in April and November go, constitute the sole food of this species.

Fearless, cheerful, active little birds, they flit rapidly up and down the rocky slopes, sportively chasing each other like children at play, or, pausing motionless for several minutes, sun themselves on some grey rock's broad bosom. But it is on the hills and amidst the rocks that they are here alone found. Scarcely a hundred feet below, the valley may stretch away all soft and green into the far distance, rich crops may wave, or the feathery golden-blossomed acacias smile invitations irresistible to Warblers and White-throats; but our little Bunting is a mountaineer, and, disdaining Capuan luxuries, clings to his much loved though inhospitable-looking alps. It is pleasant to watch a pair running and hopping about on the ground, pecking over stones and in amongst the stunted grass, and then flying to the topmost shoot of some many-branched *Euphorbia* hard by, where the female sits and plumes and suns herself, while the male alongside pours out his little feeble song. On a sudden both are off with a dart, twisting and turning in jerky flights, and dropping unexpectedly, as if shot, out of sight amidst rocks and grass. Towards the base of Taragurh some bygone chieftain (for the "Fort of Staro" was once the stronghold of mighty men) has built a massive masonry dam across the bed of what, during the rainy season, may be a torrent, but now in the winter is only a tiny rill. The bed of the stream has been brought up level with the top of the dam by rough masonry, so that in the rains there is probably a tolerable waterfall here. Inside the masonry of the dam, opening with pillar-supported arches (in front of which the falling water would hang like a curtain), a vaulted chamber has been wrought. In the course of ages innumerable cracks have opened in the roof, the whole interior surface of which, dripping from the percolation of the water running overhead, is tapestried with luxuriant tresses of maidenhair. Right and left the rocks rise precipitously; and here

and there water dribbles sluggishly in long green mossy streaks down their grey faces. Here it is that at the present time (November) our little Buntings, after a hearty breakfast on grass-seeds, come between 8 and 10 A.M. to drink. A few days ago I sat in one of the archways of the vaulted chamber for a couple of hours watching them, seeing at least a hundred pairs, and shooting some dozen or so. The birds always come in pairs, (this is the breeding-season), chasing each other, not with long flights, but flitting from *Euphorbia* to *Euphorbia*, or point to point of rock, until near one of these drinking-places, when, perching on the rock-face, where some tiny ledge affords a comfortable footing, they drink for a moment greedily, then pause to squat where they stand and enjoy the warm sunshine, drink again, zealously pick out minute grains of quartz (which always abound in their stomachs), then sit and sun themselves again, and so on. Presently one will fly up, making a pretence of swooping at the other; and then off they go, skirmishing up the hill-side, one after the other, like a couple of kittens.

The natives here call them "*Andhi Cherya*," which might be translated "the blind birds," a by no means inappropriate name, as they will often sit motionless until one's foot is almost on them. The people, however, interpret it as signifying "the bird to which men are blind;" and there is no doubt that their plumage harmonizes so well with the grey stones interspersed with reddish-yellow stunted grass, that even at short distances they are practically invisible so long as they remain, as they often will for ten minutes at a time, perfectly still.

The breeding-season appears to be November: the natives say that they also lay early in July, at the commencement of the rains; but as to this I can say nothing.

The very first birds that I shot, on November the 2nd, the day after I arrived here, proved on dissection to be breeding; and out of the oviduct of a female shot on the 3rd, I took a nearly perfect though colourless egg. For several days we hunted without success, finding many nests that I believed to belong to this species, and seeing everywhere females about, straws in mouth, but meeting with no eggs. At last, on the 12th of November, I myself accidentally stumbled upon two

nests. I was walking slowly, and, if it must be confessed, foot-sore and somewhat despondent, amid the loose blocks and rocky shingles of the southern flanks of the Taragurh Hill, when a female suddenly sprang up and darted off from within two inches of my foot. I looked down; and there, on the sloping hill-side, half overhung by a moderate-sized block of greyish quartz, was a little nest, from which the bird had risen, and on which I had been within an ace of stepping. Close at hand were two or three small tufts of yellow withered grass; but these were several inches distant from the nest. This latter (which, laid on the hill-side, was some three or four inches thick on the valley side and barely three quarters of an inch towards the hill) was composed at the base, and everywhere externally, of small thorny acacia-twigs and very coarse roots of grass. This, however, was a mere foundation and casing, on and in which the true nest was constructed of fine grass-stems, somewhat loosely put together, the bottom being lined with soft white feathers. The egg-cavity was circular and cup-shaped, about 2.25 in. in diameter and 1.25 in. in depth, and contained two tiny, yellow-gaped, dusky-bluish, fluffy chicks, apparently just hatched, and one (as it proved) rotten egg.

We drew back a few paces; the female bird returned (we saw nothing of the male), and one of my men adroitly captured her. I took the egg, and, having made sure of the species, left the mother with her young ones. We had not moved five yards away before she was again sitting on her nest as unconcernedly as possible.

Scarcely twenty yards further, on a slightly sloping slab of stone, partly overhung by a huge block, between two tufts of dry grass springing from the line of junction of the slab and block, I found a second, precisely similar nest, containing two fresh eggs, round which both parents flitted closely all the time I was occupied in examining and securing the eggs and nests, exhibiting no apparent signs of fear.

The three eggs thus obtained were regular, moderately broad oval, slightly compressed towards one end, but somewhat obtuse at both. The shells were very delicate, and had a slight gloss. The ground-colour differed somewhat in all three: in one it was

pale greenish-, in another pale bluish-, and in the third faintly brownish-white. All were spotted, speckled, and minutely but not very densely freckled with brown, a sort of reddish olive-brown in two, rather more of umber in the third; small clouds, blotches, and streaks of the same colour, and of a pale purple, were intermingled with the finer markings. In two of the eggs the markings were far most numerous towards the large end, where in one they are partially confluent; in the third they are pretty evenly distributed over the whole surface, being, however, rather denser in a broad irregular zone round the middle of the egg.

These eggs remind one not a little of those of *Emberiza elegans*, figured by Radde (Reisen im Süden von Ost-Sibirien, ii. Taf. v.), but are not nearly so broad. They are not very unlike the egg of *E. pusilla*, as figured by Dr. Bree, but they are narrower and more oval.

On the 16th, near the base of Taragurh Hill, I found another nest, precisely similar to that already described, containing two fresh eggs. These were of the same general type as those already described, but were much more strongly marked. They were richly freckled and mottled with a fine umber-brown on a pale greenish-white ground, the markings being in both most dense at the large end (where there was a conspicuous confluent zone), and almost wanting at the smaller end. The purple spots, well marked on the first three eggs, were entirely wanting in these. As usual, we captured the female bird without the slightest difficulty.

These five eggs (all I have as yet obtained) varied from .73 to .75 in. in length, and from .48 to .53 in breadth. The nests from which they were taken were all at an elevation of about 2000 feet above the sea-level; but we found others later (empty or containing young ones), from 1500 to 2500 feet.

Early in the morning of the 19th of November I climbed up the Mudar-Shah range (on the opposite side of the Ajmere plain to the Taragurh hill), which is very nearly, if not quite, 2600 feet high. On the highest pinnacle of the long knife-like ridge a tiny square temple is perched, at one season of the year a place much resorted to by pilgrims. Inside the temple the

whole upper portion of the domed roof is thickly encrusted with what I may term *confluent* nests of our common Swift (*Cypselus abyssinicus*), a mass of feathers, straw, wool, and the like, cemented together with inspissated saliva. All over the exterior of the temple are little arched recesses sunk about eight inches in the masonry; and in one of these, about five feet above the plinth, one of my people discovered a female *E. striolata* sitting on her nest. Going to the spot, I stood with my eyes within two feet of the bird; she, however, never moved, but sat calmly gazing at me with her bright dark eye. She looked so nice and sleek and cosy that I hesitated to disturb her; but the eggs of this species are almost, if not entirely, unknown in European collections, and I thought it only right to secure all I could; so I emptied a cap-box into my pocket, and had some soft rags torn to shreds, and then put my hand out gently to the nest. Away flitted the old bird, disclosing, alas! three fluffy nestlings; I drew back my hand, and that very instant the female returned and hid the chicks under her. They were very young, and the morning air on this lone pinnacle was very cold; hence her extraordinary tameness.

The nest, built on the flat bottom of the niche, was perfectly circular, with an external diameter at bottom of about 5·5 in., and an internal at top of about 2·5. The lower portion was composed of fine twigs, the upper portion and the lining of the cavity, so far as the young ones allowed this to be seen, of fine grass stems. Altogether the nest was about 2·5 in. high, and very neat and symmetrical.

Judging from my present experience, I should say that three is the full number of eggs usually laid.

I subjoin descriptions and exact dimensions taken from freshly killed specimens.

Dimensions.—Male. Length 5·75 to 5·97; expanse 9·37 to 9·75; tail from vent 2·45 to 2·75; wing from carpal joint to tip of longest primary 2·96 to 3·1, and when closed reaching from within 1·1 to 1·3 of the end of the tail; foot, greatest length from 1 to 1·1, greatest width from ·63 to ·8; bill from front ·36 to ·39; weight from ·45 to ·5 oz. (Seven males measured and weighed.)

Female. Length 5·5 to 5·9; expanse 9 to 9·5; tail from vent 2·2 to 2·72; wing from carpal joint to tip of longest primary 2·87 to 2·96, when closed reaching from within 1·1 to 1·7 of the end of the tail; foot, greatest length 1·1 to 1·17, greatest width ·72 to ·8; bill from front ·35 to ·38; weight from ·38 to ·6 oz. (Five females measured and weighed.)

Description.—The legs and feet were in some pale waxy-yellow, in some dingy, in some fleshy-yellow or yellowish-fleshy, the feet, especially at the joints, more or less tinged with brownish, the claws rather pale brown; the bill had the upper mandible brown, in some blackish-brown, the lower in some waxy-, in some fleshy-, and in some dingy yellow; irides brown. The male has the forehead, top of the head, and nape greyish-white, grey, or white, in different specimens, each feather with a conspicuous, linear, median, black streak, a narrow, pure white superciliary stripe starting from the base of the bill and extending behind the eye over the ear-coverts; the lores, and a moderately broad stripe directly behind the eye (and immediately under the white stripe), involving the upper portions of the ear-coverts, black; below this another, greyish-white stripe, involving the rest of the ear-coverts; below this, starting from the base of the lower mandible, a black stripe; below this, from the lower angle of the lower mandible, a greyish-white stripe, which, again, is divided from the greyish-white of the chin by a narrow inconspicuous dark streak.

In the fresh birds in breeding-plumage which I am describing, all these streaks and stripes are as clearly and sharply defined as if painted; but at other seasons, and in stuffed specimens, they are not so clear. The whole of the back, scapulars, and tertials are hair-brown, the former two very broadly, the latter more narrowly margined with pale, more or less sandy- or even rufous-brown. In many specimens the darker median streaks of the back-feathers are reduced to mere lines; and in some the rufous tinge on the upper back is well marked. The primaries and secondaries and their coverts are a mixture of hair-brown and rich rufous (recalling in colour the wings of *Mirafra erythroptera*), the extent of each varying in different specimens, but the brown predominating in the earlier primaries and every-

where at the tips, and decreasing in extent in the hinder part of the wing and towards the bases of the feathers. The second primary, for instance, will be all brown, except a narrow rufous edging for the basal two-thirds of the outer web and a broad rufous stripe on the margin of the inner web for the same distance, while one of the later secondaries will be all rufous, except a narrow brown stripe running down the shaft till within one-third of the end of the feather, whence it gradually widens so as to occupy at the tip the whole of both webs. The rump and upper tail-coverts are much the same as the back, but in some specimens slightly more rufous than the lower back, and the longest of the coverts are in some specimens very narrowly tipped with very pale fulvous-white. The tail is hair-brown, darker than the brown portion of the quills, all the feathers externally very narrowly margined with pale rufous, except the external feather on each side, which has the whole outer web of that colour. The throat and upper breast are greyish-white or grey, with more or less numerous and conspicuous black median stripes on the feathers. Specimens differ widely in this respect: in some the greyish-white is a mere edging to dusky black feathers; in others only a few black spots and streaks peep out of an almost unbroken grey, and this among specimens killed at the same time and of apparently the same age. The lower breast and the whole lower parts of the body are pale greyish-rufous, all the bases of the feathers (only seen if their tips are lifted) being a sort of bluish-dusky; the axillaries, wing-lining, and, in fact, the whole lower surface of the wings, except the points of the quills, a pale delicate salmon-rufous.

The female only differs in being generally somewhat smaller, in having the white, grey, and black of the head, neck, throat, and breast much duller (and in many specimens overcast with a sandy or pale rufous shade), in the various stripes being less well marked, and in having the dark spots and streaks of the throat and breast almost obsolete.

XXIX.—*Remarks on some lately-described Pittæ, with a Synopsis of the Family as now known.* By D. G. ELLIOT, F.L.S., F.Z.S., &c.

(Plates XII., XIII.)

SINCE my monograph of the *Pittidæ* was brought to a conclusion, now over seven years ago, several members of the family have been described as new; and it has occurred to me that a critical review of these, as regards their specific value, together with a comparison between them and those species long known to us, to which many of them bear a very close resemblance, might not be unacceptable to ornithologists.

I am much indebted to Mr. Gould, Mr. Swinhoe, and Dr. Schlegel, who have allowed me the use of the types of their species for description in this paper, without which I should not have been able to make the examinations necessary, and arrive at satisfactory conclusions.

The species described as new may be enumerated as follows:—*Pitta oreas*, Swinhoe; *P. megarhyncha*, *P. bankana*, and *P. sanghirana*, Schleg.; *P. simillima*, *P. strenua*, Gould; *P. krefti* and *P. bertæ*, Salvadori; and *P. digglesii*, Kreft. These I shall examine in detail. And, in accordance with the arrangement given in my work on this family, Mr. Swinhoe's species first claims our attention.

PITTA OREAS, Swinhoe, *Ibis*, 1864, p. 428.

This bird, which, I believe, represents a distinct species, was procured by Mr. Swinhoe from the Formosan mountains in May 1864. It belongs to that group which is distinguished from the other divisions of the family by having the under parts buff. It is most nearly allied to *Brachyurus coronatus* (P. L. S. Müll.), but can readily be distinguished by the crown being of a dull reddish-brown, and by having the underwing-coverts jet-black, without any trace of the white feathers which form so conspicuous a mark in its ally. In size it does not differ materially, the measurements, according to Mr. Swinhoe, being:—total length 8 inches; wing 5; tail 1·8; bill along culmen 1, to gape 1·2, depth at base ·35; tarsus 1·6. The accompanying figure (Pl. XIII. fig. 1) gives a very faithful representation of this bird.

PITTA BERTÆ, Salvadori, Atti Accad. Sc. Torin. 1868, pp. 527, 528.

A specimen of *Brachyurus moluccensis* (P. L. S. Müll.) from Borneo, differing, according to Dr. Salvadori, in its "smaller size, light blue of the rump, rose-colour of the abdomen, and white spot on the first remiges only," has been separated by that author. In the colour of the rump and abdomen it agrees with many specimens of the well-known species; and the other characteristics do not seem sufficient to establish it as distinct. I should state, however, that my opinion is formed from description only, as I have never seen the specimen.

PITTA MEGARHYNCHA, Schleg. Vog. Nederl. Ind. pl. 4. fig. 2.

This bird bears a close resemblance to *P. cyanoptera*, auctt., but possesses a bill very different, both in shape and colour, the latter being black. It also differs in having the reddish-brown of the head extending to the nape, without being broken by a black bar; the lower part of the neck behind bordered with black. The accompanying plate (Pl. XII.) readily shows the differences between this bird and its ally.

PITTA SIMILLIMA, Gould, Proc. Zool. Soc. 1868, p. 76. *P. krefti*, Salvad. Atti Soc. Ital. Sc. Nat. xii. p. 551.

I have the type specimen before me, kindly lent to me by Mr. Gould, with the locality, Cape York, marked upon the label. In every respect, as to colour and general marking of plumage, it precisely resembles *P. strepitans*, auctt., differing from it only in size. Mr. Ramsay, in a communication to 'The Ibis' (1867, p. 416), mentions the difference in the size of the *Pitta* from northern and southern portions of that continent, and also notices a further variation in the extent of the *white patch on the primaries*, which, as he says, extends over two of them in the smaller bird, but on the fourth, fifth, and sixth of the larger form. In the type specimen of *P. simillima* it is confined to a small round spot on the outer web of the fourth primary, but is not wanting, as stated by Mr. Ramsay, and is very conspicuous on the fifth and sixth, as in the large race. The two forms appear to mingle together about Moreton Bay. In their mode

of nidification, the colour of their eggs, and their call-note there is no difference whatever between them, as stated by Mr. Ramsay, on the authority of Mr. Macgillivray, who observed them in their native haunts. Taking all these things into consideration, it does not seem that we are at all justified in elevating the small *P. strepitans* into a distinct species, but that it can only be regarded as a race of the well-known bird. It is by no means unusual to meet with diminutive races of species with which ornithologists were already well acquainted, differing in no way except in size, as is the case in the present instance; and it does not appear wise to separate them specifically; for they have undoubtedly all had the same origin, the variation in size having probably been produced in the course of time through the various influences of food and climate, or other physical causes. I should therefore regard the two forms as one species, and Mr. Gould's name as a synonym of the older appellation.

The *P. krefti* of Dr. Salvadori has been admitted by him (*suprà*, p. 296) to be identical with Mr. Gould's *P. simillima*.

PITTA STRENUA, Gould, M.S.

Through Mr. Gould's kindness I have had before me a specimen which he considers to be the type of a new species as yet undescribed. In the divisions which I made of the family in my 'Monograph,' this bird would be included in the fourth group, subgenerically distinguished as *Erythropitta*. It very closely resembles *P. mackloti*, and may be regarded as the New-Guinea representative of that species. The only differences perceptible are the stouter bill and especially lower mandible of Mr. Gould's specimen, and but a faint trace of blue on the crown of the head. The extent of white on the primaries varies considerably in these birds, as they nearly all possess it in a greater or less degree; and I am inclined to believe that it should not be considered in any way an indication of specific value. Bills of birds constantly vary; and it is very unsafe to establish a species when the size of that feature is its chief support, irrespective of any peculiarity of form. Deprived of this, *P. strenua* can in no way be distinguished from *P. mackloti*; and as we are not aware if all the Pittas from the same

locality possess equally strong bills, it hardly seems sufficient to justify the elevation of the present specimen to specific rank. Its habitat is supposed to be New Guinea, it having been received with some other birds said to come from that country. I give figures of the heads of *P. mackloti* (fig. 1) and *P. strenua* (fig. 2), so that the variation in the bills can be seen at once without difficulty.

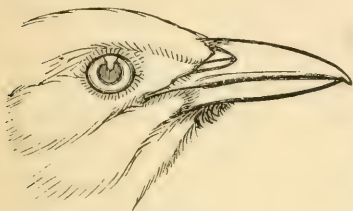


Fig. 1.



Fig. 2.

PITTA DIGGLESI, Kreft, Ibis, 1869, p. 349.

This bird was named by Mr. Gerard Kreft, as above cited; and the specimen was said to come from Cape York. Since that communication was published, many examples have been received from the same locality, and the bird has been figured by Mr. Gould in the 'Supplement' to his 'Birds of Australia.' It is in no way different from *P. mackloti* (*vide supra*, p. 119).

PITTA BANKANA, Schlegel, Vog. Nederl. Ind. pl. 2. fig. 5.

This bird, from the island of Banka, as remarked by its describer, is almost identical with *P. sordida* (P. L. S. Müll.); but it is not quite so deep in colour, and the feathers of the forehead and top of the head are tipped with a dark chestnut, which I have never seen in any examples of *P. atricapilla*, auctt., *P. cucullata* being the only one of the black-headed Pittas which has a brown crown. This species belongs to the sixth group of my work, with the subgeneric title of *Melanopitta*, and is represented in the accompanying plate (Pl. XIII., fig. 2).

PITTA SANGHIRANA, Schlegel, Ned. Tijds. Dierk. 1866, p. 190.

This bird is *P. atricapilla*, auctt., from Sanghir. Dr. Schlegel distinguishes it only by the green being darker and less bright, and the shoulders and rump being of a darker blue and less

silvery. These differences, which do not appear to be constant, but vary in all the birds of this section according to age, are not sufficient to establish a species. Nor do I think that the extent of white on the primaries is of specific value, as I find that specimens from the same islands vary in this mark very considerably; and I am inclined to believe that the one separated as *P. muelleri* on account of the primaries being all white, is only an adult of *P. atricapilla*. Specimens of so-called *P. sanghirana* which I have examined do not agree together in the extent of white on the primaries; and if this mark were of specific value, they should be separated; but my examination of the specimens lately placed at my disposal together with, through Mr. G. R. Gray's kindness, those contained in the British-Museum collection, leads me to the conclusion that those birds of this section with white on their primaries have but a comparatively small extent of it when young, and that it increases in successive moults as the bird grows older, until it occupies almost the whole feather, the end only being tipped with black, as we see in so-called *P. muelleri*, which, according to my view, is only the adult form of *P. atricapilla*.

Having now examined all the species, good and bad, which have been described since my work was completed, I proceed to give a synoptical list of the entire family, with some remarks upon certain of its members, whose names I had placed among the synonyms of other well-established species, but which are still considered, by some authors, to be entitled to specific rank.

Family PITTIDÆ.

Subfamily Pittinæ.

Genus BRACHYURUS, Thunberg.

§ *Gigantipitta*.

1. BRACHYURUS CÆRULEUS.

Myiothera cærulea, Raffles, Trans. Linn. Soc. vol. xiii. p. 301.

Brachyurus cæruleus, Elliot, Mon. Pitt. pl. i.

Cæruleus; genis corporeque subtus fulvescentibus; occipite subcristato; pilis, vitta postoculari collarique interrupto nigris; rostro nigro; pedibus fuscis.

Hab. Sumatra.

§ *Hydrornis*.

2. BRACHYURUS NEPALENSIS.

Pitta nepalensis, Hodgs. J. A. S. B. vi. p. 103.

Brachyurus nipalensis, Elliot, Mon. Pitt. pl. iii.

Cæruleo-virens; sincipite, genis et corpore subtus fulvis; gula crissoque albis; occipite et nucha viridi-cyaneis; alis caudaque brunneis; rostro brunneo, basi fusco.

Hab. Nepaul, Sikhim, Bhotan (*Hodgs.*).

§ *Leucopitta*.

3. BRACHYURUS CYANEUS.

Pitta cyanea, Blyth, J. A. S. B. xii. p. 1008.

Brachyurus cyaneus, Elliot, Mon. Pitt. pl. xiii.

Cyaneus; subtus pallidior, maculis nigris variegatus; abdomine et crisso albis, capite griseo, nucha rubro-aurantia; striga oculari nigro maculata; gutture flavo; primariis nigris.

Hab. Aracan (*Blyth*).

+ 4. BRACHYURUS MAXIMUS.

Pitta maxima, Forst. Bijd. Dierk. 1854, pl. i.

Brachyurus maximus, Elliot, Mon. Pitt. pl. xii.

Niger; pectore lateribusque albis; tectricibus alarum cæruleis; abdomine crissoque rubris; rostro nigro; pedibus pallescentibus.

Hab. Gilolo.

§ *Cervinipitta*.

+ 5. BRACHYURUS MOLUCCENSIS.

Corvus brachyurus, Linn. Syst. Nat. i. p. 158 (1766) ?

Turdus moluccensis, P. L. S. Müller, Natursyst. Anhang, p. 144 (1776).

Corvus brachyurus, var. δ . *madagascariensis*, Gmel. Syst. Nat. i. p. 376 (1788) *partim*.

Pitta cyanoptera, Temm. Pl. Col. no. 218.

Brachyurus cyanopterus, Elliot, Mon. Pitt. pl. iv.

Viridis; capite nigro, vitta fulvo-brunnea; tectricibus alarum uropygioque azureis; gula alba; subtus ochraceus; abdomine et crisso pulchre rubris; remigibus nigris albo-fasciatis; rectricibus nigris, apice cæruleis; rostro brunneo.

Hab. Java, Sumatra, Borneo, Malacca, Amoy, Siam.

This species, which has generally been known by Temminck's name of *P. cyanoptera*, is undoubtedly the one called *moluccensis* by Müller in 1776; and as his specific name antedates those of all other authors, except that of Linnæus, which is raised to generic rank, it must stand, and *cyanoptera* with the rest become synonyms. Mr. Swinhoe (P. Z. S. 1861, p. 412) has referred a *Pitta*, which he received in Amoy, to *P. nympha*, Schlegel, knowing (like all other ornithologists) that species only from the plate in the 'Fauna Japonica.' He has lately placed this specimen in my hands for examination; and I find that it is only the present species with the black of the crown not quite so strongly defined. The differences exhibited in the specimen are hardly sufficient to consider it even a Chinese race of *P. moluccensis*.

6. *BRACHYURUS MEGARHYNCHUS*. (Plate XII.)

Pitta megarhyncha, Schleg. Vog. Ned. Ind. pl. 4. fig. 2.

Capite toto ochraceo; torque nuchali nigro angustiore; gutture toto albo; rostro crassissimo, nigro.

Hab. Banka.

7. *BRACHYURUS ANGOLENSIS*.

Pitta angolensis, Hartl. Orn. Westafr. p. 74. no. 223 (1857).

Brachyurus angolensis, Elliot, Mon. Pitt. pl. v.

Viridis: capite nigro, vitta superciliari rufo-brunnea; gula roseo-tincta; tectricibus alarum minoribus uropygioque cyaneis; primariis nigris albo-punctatis; pectore ochraceo-fulvo; abdomine crissoque latissime coccineis; cauda nigra apice cærulescente; rostro nigro.

Hab. Sierra Leone.

8. *BRACHYURUS CORONATUS*.

Turdus coronatus, P. L. S. Müller, Natursyst. Anhang, p. 144 (1776).

Corvus brachyurus, var. *γ. bengalensis*, Gmel. Syst. Nat. i. p. 376 (1778).

Brachyurus bengalensis, Elliot, Mon. Pitt. pl. vi.

Obscure viridis: genis nigris, gula alba; pectore abdomineque ex brunneo flavis; uropygio, tectricibus alarum minoribus, caudæque apice, cyaneis; speculo alari albo; abdomine crissoque rubris.

Hab. Himalayas to Ceylon.

The name *bengalensis*, by which this species has been so long known, must become a synonym of Müller's appellation of *coronatus* applied two years previously.

9. BRACHYURUS OREAS.

Pitta oreas, Swinhoe, Ibis, 1864, p. 428.

Viridis: pileo sordide rufo-brunneo, supercilio ochrascente; striga verticali et altera, a rostro per regionem paroticam usque ad nucham eunte, nigris; subtus pallide ochracea; hypochondriis viridi-lavatis; abdomine coccineo; rostro nigro.

Hab. Formosa.

10. BRACHYURUS VIGORSI.

Pitta brachyura, Vig. & Horsf. Trans. Linn. Soc. xv. p. 218.

Brachyurus vigorsi, Elliot, Mon. Pitt. pl. vii.

Viridis: subtus ochraceus; capite nigro; vitta superciliari alba, postice pallide viridi; gula alba; abdomine crissoque coccineis; tectricibus alarum, uropygioque cæruleis; cauda nigra, apice viridi.

Hab. Banda Islands (*Wallace*); Australia (*Vigors*).

11. BRACHYURUS NYMPHA.

Pitta nympha, Temm. & Schleg. Faun. Jap. Aves, Suppl. tab. A.

Brachyurus nympha, Elliot, Mon. Pitt. pl. viii.

Dilute viridis: capite nigro; vitta superciliari albo-rufescente; gula pectoreque albo-cinerascentibus; cauda nigra, apice viridi; rostro nigro.

Hab. Japan?

No specimen of this bird has ever been seen by any naturalist; and it is only known by the plate in the 'Fauna Japonica,' from which my drawing was made. It presents some differences from any other known species; and until we can get a specimen, it will be best to allow it to remain as distinct.

12. BRACHYURUS STREPITANS.

Pitta strepitans, Temm. Pl. Col. no. 333.

Pitta simillima, Gould, P. Z. S. 1868, p. 76.

Pitta krefti, Salvad. Atti Soc. Ital. S. N. xii. p. 551.

Brachyurus strepitans, Elliot, Mon. Pitt. pl. ix.

Viridis: subtus ochraceus; pileo castaneo, linea occipitali, fascia

nuchæ, gula, abdomineque medio nigris; crisso coccineo; rectricibus nigris, apice viridi-fuscis; rostro nigro.

Hab. Australia.

13. BRACHYURUS CONCINNUS.

Pitta concinna, Gould, P. Z. S. 1857, p. 65.

Brachyurus concinnus, Elliot, Mon. Pitt. pl. x.

Viridis: capite juguloque nigris; vittis superciliaribus rufis; nucha albo-cærulescente; primariis, caudaque nigris; subtus ochraceus.

Hab. Lombock, Sumbawa, Flores.

14. BRACHYURUS IRENA.

Pitta irena, Temm. Pl. Col. no. 591.

Brachyurus irena, Elliot, Mon. Pitt. pl. xi.

Pitta crassirostris, Wallace, P. Z. S. 1862, p. 188.

Brachyurus crassirostris, Elliot, Mon. Pitt.

Viridis: capite nigro, superciliis flavescentibus; cauda nigra, apice viridi; subtus ochraceus; rostro nigro.

Hab. Timor, Ternate (*Schleg.*); Sulla Islands (*Wallace*).

In my 'Monograph' I included this bird with a query, as it seemed impossible to separate it from *B. irena*. I had not seen any specimen of the bird at the time; and my opinion was formed from Mr. Wallace's description, together with a water-colour drawing of the type sent to me by Mr. Selater. Mr. Gould has placed in my hands one of Mr. Wallace's specimens; and I do not think it presents any differences sufficient for me to alter my opinion, and separate it from *B. irena*, which it appears to be. It is not like *B. vigorsi* or *B. concinnus*, with which Mr. Wallace compares it, being much too large for either of those species; and from typical *B. irena* it varies in the black of the throat not extending quite so far on the breast. The bill is rather lighter, but does not differ perceptibly in size. I hardly think it can be separated from *B. irena*. Its habitat, as stated by Mr. Wallace, is the Sulla Islands.

§ *Purpureipitta*.

15. BRACHYURUS VENUSTUS.

Pitta venusta, Temm. Pl. Col. no. 500.

Brachyurus venustus, Elliot, Mon. Pitt. pl. xiv.

Purpureo-nigricans; stria postoculari utrinque protracta tectri-

cumque alarum marginibus cæruleis; abdomine et crisso rubris.

Hab. Sumatra.

§ *Phænicocichla.*

† 16. BRACHYURUS GRANATINUS.

Pitta granatina, Temm. Pl. Col. no. 506.

Brachyurus granatinus, Elliot, Mon. Pitt. pl. xv.

Occipite, nucha, corporeque subtus coccineis: alis, dorso, cauda strigaeque utrinque nuchæ cyaneis: gula granatina; lateribus capitis, pedibus rostroque atris.

Hab. Malay Peninsula and Borneo.

In my former account of this species I included among its synonyms the *P. coccinea* of Eyton. There seems to be a slight difference between individuals from Malacca and Borneo. I have specimens before me from both localities. The Bornean bird has the black on the forehead of a greater width, and its colours are generally brighter, the blue stripe behind the eye being somewhat lighter. The general appearance of the bird, however, is the same, and I do not think they should be separated as distinct. There is no difference in size, and it requires a very nice discrimination to discover characters which would be sufficient to make two species of them. I therefore still retain *P. coccinea* (fig. 3) of Eyton as a synonym of *P. granatina* (fig. 4); the heads of both being represented below.



Fig. 3.



Fig. 4.

§ *Erythropitta.*

17. BRACHYURUS ERYTHROGASTER.

Pitta erythrogastra, Temm. Pl. Col. no. 212.

Brachyurus erythrogastra, Elliot, Mon. Pitt. pl. xvi.

Cæruleus: capite rufo; gula nigra; dorso viridi; abdomine crissoque coccineis.

Hab. Philippine Islands.

18. *BRACHYURUS CELEBENSIS.**Pitta celebensis*, Forsten, Bijdr. Dierk. pl. 3.*Brachyurus celebensis*, Elliot, Mon. Pitt. pl. xvii.

Viridis: capite rufo; vitta verticali cærulescente; alis caudaque cæruleis; fascia pectorali cyanea, gula rufa; rostro brunneo.

Hab. Celebes.19. *BRACHYURUS RUBRINUCHA.**Pitta rubrinucha*, Wallace, P. Z. S. 1862, p. 187.*Brachyurus rubrinucha*, Elliot, Mon. Pitt. pl. xviii.

Viridis: capite et gula rufis; nucha rubra; vittis genisque dilute cæruleis; fascia pectorali caudaque cyaneis; abdomine et crisso coccineis; primariis nigris albo-punctatis; rostro nigro.

Hab. Bouru.20. *BRACHYURUS RUFIVENTRIS.**Coloburis rufiventris*, Cab. & Heine, J. f. O. 1859, p. 406.*Brachyurus rufiventris*, Elliot, Mon. Pitt. pl. xix.

Supra obscure cærulescenti-viridis; pileo brunneo; cervice rufescente; rectricibus virescenti-cæruleis; abdomine et crisso rufis; fascia pectorali lata cærulescente; rostro brunneo.

Hab. Batchian, Gilolo.21. *BRACHYURUS CYANONOTUS.**Pitta cyanonota*, G. R. Gray, P. Z. S. 1860, p. 351.*Brachyurus cyanonota*, Elliot, Mon. Pitt. pl. xx.

Cæruleus: capite rufo; fascia pectorali cyanea; abdomine crissoque coccineis; rostro nigro.

Hab. Ternate.22. *BRACHYURUS MACKLOTI.*

Pitta mackloti, S. Müll. & Schleg. Verh. Nat. Geschied. Nederl. Ind. p. 12.

Pitta krefti, Salvadori, Atti Soc. Ital. S. N. xii. p. 551.*Pitta digglesi*, Kreft, Ibis, 1869, p. 350.*Brachyurus mackloti*, Elliot, Mon. Pitt. pl. xxi.

Viridis: capite brunneo, facie fusco-violacea; gula nigra; alis caudaque cæruleis; fascia pectorali cærulea; abdomine crissoque coccineis.

Hab. New Guinea, Papuan Islands (*Wallace*), Australia.

§ *Iridipitta*.

23. BRACHYURUS BAUDI.

Pitta baudi, S. Müll. & Schleg. Verh. Nat. Geschied. Nederl. Ind. pl. 2.

Brachyurus baudi, Elliot, Mon. Pitt. pl. xxii.

Pileo cæruleo ; genis, pectore tectricibusque alarum nigris ; gula alba ; dorso rubro ; remigibus nigris ; abdomine atrocæruleo ; rostro nigro.

Hab. Borneo.

24. BRACHYURUS IRIS.

Pitta iris, Gould, P. Z. S. 1842, p. 17.

Brachyurus iris, Elliot, Mon. Pitt. pl. xxiii.

Niger : fascia superoculari ferruginea ; corpore supra alisque ex aureo viridibus ; cauda nigra, apice viridi ; crisso rubro ; rostro nigro.

Hab. Australia.

§ *Melanopitta*.

25. BRACHYURUS FORSTENI.

Pitta melanocephala, Forsten, Bijd. Dierk. pl. 2.

Brachyurus forsteni, Elliot, Mon. Pitt. pl. xxiv.

Viridis : capite colloque nigris ; remigibus ex toto nigris ; abdomine crissoque rubris ; rostro nigro.

Hab. Celebes.

26. BRACHYURUS SORDIDUS.

Turdus sordidus, P. L. S. Müller, Natursyst. Anhang, p. 143 (1776).

La Brève des Philippines, Cuv. Reg. Anim. (1829) p. 373.

Pitta atricapilla, Less. Tr. d'Orn. (1829) p. 394, sp. 7.

Pitta sanghirana, Schleg. Ned. Tijd. Dierk. 1866, p. 190.

Pitta muelleri, Bp. Consp. Av. i. p. 256.

Brachyurus muelleri, Elliot, Mon. Pitt. pl. xxvi.

Brachyurus atricapillus, Elliot, Mon. Pitt. pl. xxv.

Viridis : capite colloque nigris ; cauda nigra apice cærulescente ; remigibus fere ex toto candidis, apice nigris ; abdomine et rostro nigris.

Hab. Philippine Islands, Sanghir, Borneo, Sumatra.

I describe what I consider to be the adult of this species,

with but the tips of the primaries black. In the majority of specimens more or less of these feathers is black, the extent of white varying greatly, so as to render it very difficult, if not totally impossible, to distinguish them satisfactorily as distinct species. It has generally been called *atricapilla* by naturalists; but that name has to give way to the *sordidus* of Müller, bestowed upon the bird in 1776 by him, and having precedence over all others.

27. BRACHYURUS NOVÆ-GUINÆÆ.

Pitta novæ-guinææ, Müll. & Schleg. Verh. Nat. Geschied. Nederl. Ind. no. 21.

Brachyurus novæ-guinææ, Elliot, Mon. Pitt. pl. xxvii.

Obscure viridis: capite colloque nigris; remigibus brunneis, quarto, quinto et sexto albo-signatis; pectore metallice virescente; cauda fusco-viridi.

Hab. New Guinea, Papuan Islands (*Wallace*).

28. BRACHYURUS BANKANÆ.

Pitta bangkana, Schleg. Vog. Nederl. Ind. pl. 2, fig. 8.

Viridis: pileo brunneo-tincto; collo gulaque nigris; cauda nigra, apice cærulescente; remigibus nigris, ex parte albis; rostro nigro.

Hab. Banka.

29. BRACHYURUS CUCULLATUS.

Pitta malaccensis, S. Müll. & Schleg. Verh. Nat. Geschied. Nederl. Ind. p. 13.

Brachyurus cucullatus, Elliot, Mon. Pitt. pl. xxviii.

Viridis: capitis lateribus, gula, superciliis angustis, colloque toto nitide nigris; pileo nuchaque castaneis; primariis nigris macula magna alba media notatis.

Hab. Malacca, Nepaul, Assam.

Genus PITTA, Vieillot.

30. PITTA GUAIANA.

Turdus guaianus, P. L. S. Müll. Natursyst. Anhang, p. 146 (1776).

Turdus cyanurus, Gmel. Syst. Nat. i. p. 828 (1788).

Pitta cyanura, Elliot, Mon. Pitt. pl. xxix.

Olivacea: capite nigro, vitta superciliari flava; gula alba; remi-

gibus nigris; cauda cyanea: subtus latissime ochracea ex toto fasciata; rostro nigro.

Hab. Java.

Müller described and named this species some years before Gmelin bestowed on it the appellation by which it has generally been known.

31. PITTA SCHWANERI.

Pitta schwaneri, Temm. Elliot, Mon. Pitt. pl. xxx.

Rufo-olivacea: capite nigro, vittis superciliaribus aureo-flavis; pectore lateribusque aureo-flavis, cæruleo-lineatis; cauda abdomineque azureis; rostro nigro.

Hab. Borneo.

+ 32. PITTA BOSCHI.

Pitta boschi, S. Müll. & Schleg. Verh. Nat. Gesch. Nederl. Ind. pl. 5; Elliot, Mon. Pitt. pl. xxxi.

Rufo-olivacea: vittis superciliaribus pectoralibusque flavo-aurantiacis; collari lato nigro; gula alba; abdomine et cauda cyaneis; rostro nigro.

Hab. Sumatra, Malacca.

XXX. *Critical Remarks on Dr. von Heuglin's 'Ornithologie Nordost-Afrika's.'* By R. B. SHARPE, F.L.S., Libr. Z.S., &c.

THE work on the ornithology of North-Eastern Africa, of which Dr. von Heuglin's many papers in the 'Journal für Ornithologie,' have been the precursors, has at length appeared*; and I take the present opportunity of offering to the readers of 'The Ibis' a few remarks on the thirteen *Lieferungen* now published, the last of which has only just reached this country. Many of the suggestions I shall have to make are due to Messrs. Gurney and Tristram, to whom I accordingly beg leave to tender my thanks. All ornithologists must gladly welcome Dr. von Heuglin's work as a very valuable addition to our knowledge of the avifauna of the Ethiopian region; and his long personal experience in North-Eastern Africa has given him the advantage

* [Vide antea, p. 127.—ED.]

of obtaining an insight into the habits of the birds, which lends an additional charm to his writings. These field-observations are perhaps the most original part of the book; for it is plain from internal evidence that the author had at his side proof-sheets of the recently published "Vögel Ost-Afrikas" of Drs. Finsch and Hartlaub, from which many of the scientific data have been derived. In future years the student might wonder at finding the "Vögel Ost-Afrikas," which has appeared in the present year 1870, quoted in various ornithological publications bearing the date 1869; and it is therefore well to state that this great work was more than a year in printing, and that the authors, with the utmost liberality, distributed proof-sheets to many of their friends; so that the book is often cited in my own "Monograph of the *Alcedinidæ*," Mr. Gray's "Hand-List of Birds," and the work now under notice, for some time before it was actually published. Dr. von Heuglin has largely availed himself of the privilege thus accorded to him, and there can be no doubt of the benefit which the scientific portion of his book has thereby received.

It is a matter of rejoicing that the present work, so far as it has proceeded, relieves Dr. von Heuglin from the stigma attaching to the authorship of the unsatisfactory "Systematische Uebersicht der Vögel Nord-Ost-Afrika's," published in the Reports of the Vienna Academy in 1856.

Dr. von Heuglin's present list of *Vulturidæ* should be collated with the remarks given by Mr. Blyth in his "Commentary on Dr. Jerdon's 'Birds of India'" (Ibis, 1866, pp. 232-234), a paper which seems hardly to have been sufficiently studied. Thus *Neophron ginginianus* is united to *N. percnopterus*, which consequently is said to range into India, whereas the Indian bird is now, I believe, generally admitted to be distinct, and bears the former name. Again, *Vultur nubicus* is referred to *V. auricularis*, a proceeding about which there still remains some doubt, though I would also remark that the *V. occipitalis* of Burchell is unquestionably the *V. chincoü* of Daudin (Tr. d'Orn. ii. p. 12), the latter name thus having a priority of more than twenty years.

I regard it as a mistake (p. 96) to cite *Falco babylonicus* as a

synonym, either of *F. lanarius* or of the race which does not seem to be specifically distinct from *F. lanarius*, but is called by Prof. Schlegel *F. lanarius græcus* (Mus. P.-B. *Falcones*, p. 15). *F. babylonicus* is a distinct race, nearer to *F. barbarus* than to *F. lanarius*, but decidedly larger than the former. To complete the synonymy of *F. sacer* (p. 27), the name *F. cherrug*, J. E. Gray, should be added. I believe the author is wrong in uniting (p. 36) the African *F. ruficollis* with the Indian *F. chicquera*, which, however closely allied it may be, certainly constitutes a distinct species; and the latter name unquestionably belongs to the Eastern bird, having been founded by Daudin on Levaillant’s “*Chicquera*” (Ois. d’Afr. pl. 30), which is expressly said to have been obtained in Bengal. It is on the other hand satisfactory that Dr. von Heuglin concurs (p. 38) in the opinion expressed by Mr. Selater in ‘The Ibis’ for 1861 (p. 346), that his *F. castanonotus* is the female of *F. semitorquatus* of Sir A. Smith; and the plate of the young male now given (tab. i.) shows that, as in most other birds, the immature of that sex resembles the adult female rather than the adult male. It is surely an error (p. 40) to refer, even with the expression of a doubt, the *F. desertorum* of Daudin (Tr. d’Orn. ii. p. 162), founded on the “*Rougri*” of Levaillant (Ois. d’Afr. pl. 17), to *F. vespertinus**. The beautiful *Tinnunculus alopex*, one of the most interesting of Dr. Heuglin’s discoveries, and long ago figured in this journal (*Ibis*, 1861, pl. iii.) is still wanting, so far as I know, in every museum in England. There is, however, at Leyden a specimen of this very distinct species of Kestrel. *Aquila vindhiana* and *A. punctata* can hardly with propriety be cited (p. 45) as synonyms of *A. rapax* (sc. *A. navioides*), as they belong to the closely allied but smaller and distinct Indian race. *A. fulvescens* may probably be a synonym of the larger race (the true *A. navioides*), which also occurs in North-Western India. In his account of *Astur palumbarius* (p. 59), Dr. von Heuglin states that it is found in Europe, with the exception of Iceland and Lapland—an assertion that is no doubt true with regard to the first-named of those northern lands, but quite erroneous so far as the last is concerned, since Wolley found it commonly breeding there, and

* Cf. *Ibis*, 1862, pp. 361–363.

even took a nest in lat. 70° N. nearly (Ooth. Woll. § 117). *Falco zonarius*, Temm. (Pl. Col. 374, 420) is referred to *Nisus unduliventer* (p. 67); but on this point Mr. Gurney's remarks (*anteà*, p. 59) should be consulted. *N. hartlaubi* (p. 69) is quite distinct from *Accipiter minullus*, and considerably larger; the true West-African race of the latter being *A. erythropus*. The female of *A. minullus* is described as "*obsoletius tincta*;" but I may remark that in specimens from South-Eastern Africa there is no difference in colouring between the sexes when fully adult; Levaillant's plate represents an immature bird. Again (p. 70), Dr. von Heuglin unites three nearly allied but distinct species under the common name of *Nisus badius*. They are as follows:—

1. *Accipiter badius*=*A. dussumieri*.
2. *Accipiter spheonurus*=*A. brachydactylus*.
3. *Accipiter polyzonoides*.

I have never seen the true *A. badius* from any locality west of India; but it is represented in the West by three closely allied though distinct races, viz.:—in South-Eastern Europe and South-Western Asia by the somewhat larger species *A. brevipes*; in tropical Africa north of the equator by *A. spheonurus*, in which the males are of nearly the same size as those of *A. badius*, but the females are always smaller; in Africa south of the equator by *A. polyzonoides*, a still more distinct race than *A. spheonurus* and much less rufous on the under parts when adult. In Madagascar the same form, again somewhat varied, occurs in a fifth species, *A. madagascariensis*. The northern *Nisus niloticus* (Sundev.) is not recognized (p. 73) as distinct from the southern *N. gabar*; but Mr. Gurney thinks that they ought to be separated, and this view is corroborated by Mr. Blanford in his newly-published work (Geol. and Zool. Abyss. p. 292). In conclusion, it may be remarked that these birds, though referred by Dr. von Heuglin to the genus *Nisus*, are in fact small species of *Melierax**. He (p. 76) also unites the *Polyboroides* of Africa with that of Madagascar, which is apparently quite distinct (*cf.* Ibis, 1869, p. 451); and the identity of

* Mr. Layard (B. S. Afr. p. 30) mentions that *M. gabar* whistles "better than *M. musicus*."

Helotarsus ecaudatus and *H. leuconotus* does not yet seem to be satisfactorily established.

The utility of the golden rule, to regard only names published with descriptions, which English naturalists almost universally recognize, was never more clearly exemplified than when the present work is judged by its standard. The author accords priority to the names given—without any diagnosis of the species, in his own 'Systematische Uebersicht,' concerning which we fully agree with Mr. Blanford (Geol. and Zool. Abyss. p. 211), and to those of the 'Icones Ineditæ' of Prince Paul of Württemberg. It is for this reason that I cannot allow the synonym of *Circaetus fasciatus*, Heugl., published without description in the aforementioned list, to take precedence of *C. beaudouini*, published in due form by MM. J. Verreaux and Desmurs, in 'The Ibis' for 1862 (p. 212). He is further certainly in error (p. 86) when he associates with this species *C. fasciolatus*, Gray, from Natal, which is undoubtedly a distinct species, and the smallest of the genus, whereas *C. beaudouini* is one of the largest. He expresses a doubt as to the occurrence of the latter in West Africa; but there is a specimen from Bissao in the grand collection at Norwich. *C. fasciolatus* is also a perfectly distinct form, smaller than *C. zonurus*, to which, as well as to the previous species, the author doubtfully refers it. This last title, again, has no claim to priority (p. 86), and the species should stand as *C. cinerascens*, W. von Müller, whose labours in the cause of African ornithology have scarcely received the notice they deserve. Further particulars are desirable as to the specimen of *Buteo augur* from Southern Africa, stated in the present work to be in the Stuttgart Museum, as this is the only instance hitherto recorded of the occurrence of the species so far to the southward. Whether Dr. von Heuglin is correct (p. 93) in referring *B. auguralis*, Salvad., to *B. anceps*, A. Brehm*, is questionable. He does not appear to be aware that this species sometimes extends to West Africa. The Zoological Society had two living specimens from that locality, one of which is now in the British Museum. M. Verreaux has also, I believe, received it from the

* This species was described in the 'Naumannia,' for 1855, not 1854, as the reference has it.

Gold Coast. *Circus maurus* (p. 106) is a good South-African species, and quite distinct from the melanism of *C. cineraceus*, which occurs in Europe as well as in Africa, and was named by Vieillot *C. ater*.

Otus habessinicus (p. 107) is a rare bird, apparently, and is not represented in any English Museum. Mr. Gurney's interesting identification of *Bubo dilloni*, Des Murs and Prevost, with the South-African *B. capensis*, A. Smith (*cf.* *Ibis*, 1869, p. 462), must not be lost sight of, as it confirms the occurrence of this rare species in North-Eastern Africa—a fact the author seems inclined to doubt, though he has very properly accorded it a place in his work. The southern *B. verreauxi*, given (p. 112) as a synonym of the northern *B. lacteus*, is permanently distinguishable by its larger dimensions. *B. cinerascens* of the "Voyage en Abyssinie" (pl. 4) is made (p. 114) a synonym of *B. maculosus*; but this is apparently the true and very distinct *Huhua cinerascens*. The colour of the eye in the work just mentioned is wrongly given in the plate and right in the text.

Caprimulgus infuscatus and *C. isabellinus* are referred respectively to *C. nubicus*, Licht., and *C. aegyptius*, Licht. (Verz. Doubl. p. 59); and these identifications, which appear to rest on good grounds, have been adopted by Mr. G. R. Gray in his "Hand-List." *C. inornatus*, Heugl., now really "published" for the first time, seems to be a good species, of which there were specimens in the Abyssinian collections of Messrs. Blanford and Jesse. The identification of *C. poliocephalus*, Heugl. (*nec* Rüpp.) with *C. tamaricis*, Tristr., (*Ibis*, 1866, pl. ii.) is interesting, as it extends the range of the latter species. The fact that the Berlin Museum contains, as is stated (p. 134) an example of *Scotornis longicauda* marked as coming from "Ost-Indien" is singular, and this very vague locality requires confirmation; for I am inclined to doubt the appearance of *Scotornis* away from the Ethiopian region, of which it may be regarded as a typical genus. The relegation of *Cosmetornis vexillaria* to the genus *Macrodipteryx* is one to which I cannot agree; for the former and *M. longipennis* should certainly be referred to separate and distinct genera. It is interesting to know that *Caprimulgus europæus* extends as far south-

ward as the Somali Coast in winter ; but with regard to Dr. von Heuglin’s note to the effect that it is doubtful whether *C. smithi*, Bp. (*C. europæus*, A. Smith), from South Africa is really distinct from the true *C. europæus*, I can state that no species could well be more distinct. Besides sundry differences in colour, the South-African bird wants altogether the white spots on the wings and tail so conspicuous in the male of the other.

The unusual quantity of manuscript names, freely enough interspersed throughout the book, but particularly in the *Caprimulgidæ*, may well be complained of. Thus in the account of this family alone no fewer than seven such names, which we are careful not to repeat here, are introduced. Having referred to them elsewhere, the author should have been content to let them drop into the obscurity they merit. Nobody is really interested in them ; they can never possibly be adopted, and only tend to make worse the already sufficiently confused mass of Caprimulgine nomenclature ; besides, in the present instance, they reflect no credit on their proposer, and might have been most properly ignored.

We believe that the author is right in merging *Cypselus gutturalis* in *C. melba*, in contradiction of the opinion of Mr. Tristram (P. Z. S. 1867, p. 886). On comparing European examples with South-African, I find scarcely any difference. With the second species of *Cypselus* mentioned, Dr. von Heuglin has been guilty of an injustice in giving preference to his own name, *C. rueppelli*, printed in 1856, over the name *C. æquatorialis*, W. von Müll., published in 1851. He proposes to separate as a variety the eastern *C. caffer* under the name of *C. caffer orientalis*, on account of its smaller size and the less extent of white on the throat. From what I have seen of the variation of this latter character in the common *C. apus* I have been led to examine the question so far as I could ; and I can find no definite rule, specimens from South Africa varying considerably in the extent of white.

On the authority of a passage in Captain Grant’s ‘Walk across Africa,’ of a small black Swallow having been observed along with the beautiful white-headed species *Psalidoprocne*

albiceps, Selater (P.Z.S. 1864, pl. xiv.), the author includes the West-African *P. obscura*, with a mark of doubt, as likely to have been the bird observed. This, I think, he was scarcely justified in doing. If, as is possible, *Atticora griseopyga*, Sundev., is identical with *A. melbina*, Verr., from the Gaboon, this species of Swallow will be found to possess a very extended range. *Hirundo albigularis*, from North-eastern Africa (p. 163), is now generally understood and admitted to be distinct from the true *H. albigularis*, Strickl., from South Africa. This is indubitable; and the name *H. athiopica*, Blanford, is applied to the northern form. That *H. fuscicapilla* is a stage of plumage of *H. ruficeps*, Licht., which I am inclined to regard as an African form smaller than the true *H. filifera* from India, may be expected. The species from Africa is always much smaller, and never gains the size or fine plumage of the Indian bird. Dr. von Heuglin is surely wrong in admitting even for a moment *H. cucullata* on the authority of Lefebvre. A more untrustworthy authority than this "Voyage" can scarcely be found; and we should certainly not trust the authors of the ornithological part as the sole evidence for the occurrence in Abyssinia of a bird never before or since observed there. No doubt the strictly northern and closely allied species, *A. puella*, was mistaken for it. Again, I am not satisfied as to the distinctness of *Cotyle minor* from *C. paludicola*.

On the Kingfishers I have not much to say, except that there seems to be little doubt now that the true *Alcedo cristata*, Linn., seems to be the Madagascar species, and not the Continental form; and, again, *A. cyanocephala*, Shaw, if really an inhabitant of Abyssinia, of which Dr. von Heuglin is doubtful, and I am decidedly sceptical, must stand as *A. galerita*, W. von Müll., as it does in Mr. Gray's 'Hand-List' (p. 96). The author separates *A. cyanostigma* from *A. cristata*; but, as I have elsewhere demonstrated, it is only the young of the latter. Again, he does not seem to be aware of the separation of *Ispidina natalensis* from the West-African *I. picta* as set forth by myself (Ibis, 1869, p. 281, and Monogr. *Alced.* pt. vi.). Can the bird quoted by Dr. von Heuglin as the young male of *Ceryle maxima* be the newly described *C. sharpii*, Gould? The measurements adduced suggest the possibility of such an identification, as well

as the colour of the abdomen. *Dacelo fusca* is the name employed in the present work for the well-known *Halcyon smyrnensis*; but the latter specific name, published in 1766, takes precedence over Boddaert’s, published in 1783. It is decidedly wrong to unite the St. Jago Kingfisher, *H. erythrogastra*, to the Continental bird, *H. semicærulea*. If, as Dr. von Heuglin admits, the South-African *H. cyanoleuca* is distinct from *H. senegalensis*, he should not give the latter as an inhabitant of S. Africa. Then, again, why is *H. chelicuti*—the suggestion of an improved [?] reading is due to Drs. Hartlaub and Finsch (*cf.* Ibis, 1869, p. 278), to be written in the barbarous fashion proposed by the author, *D. tschelicutensis*? In the account of this Kingfisher may be noticed several irregularities in synonymy which will suggest themselves at once to the general reader. For instance, the quotation of “Daubeny” in Sir W. Jardine’s ‘Contributions’ for 1852—the author of the paper being Mr. Sclater. Again, by Dr. Hartlaub, myself and others, *Alcedo variegata*, Vieill., and *A. striolata*, Licht., are not positively considered identical with *H. damarensis*, Strickl., which is a perceptibly larger form. Dr. von Heuglin, following Dr. Finsch, unites *Merops superciliosus* with *M. ægyptius*; and in this he is most probably correct. *M. boleslavskii*, Von Pelz., is supposed to be the young of *M. bullocki*.

On the Sunbirds the author gives some very interesting notes. He lays great stress on the difference between *Nectarinia acik* and *N. senegalensis*, which I believe to be a good species. Beyond this I have no remarks to make on this group. Passing next to the *Certhiide*, I am certainly inclined to question the occurrence of *Tichodroma muraria* in Egypt. Though stated by Rüppell to be found in that country and in Abyssinia, Dr. von Heuglin never observed it in North-Eastern Africa at all.

We then come to the *Drymæcæ*; and as it is impossible without specimens to criticize the author’s species, I must pass them by, but I cannot help remarking that the difference in the number of rectrices does not appear to be of much value as a character; for I cannot admit that, taking *Cisticola schænicola* as the type of the genus, such birds as *Drymæca flaveola* and some others are generically identical. Dr. von Heuglin cannot be too

highly complimented on the very careful and elaborate descriptions he furnishes, thus rendering every assistance to the student of these difficult Warblers. *Hemipteryx habessinica*, Heugl., is probably the same as *Cisticola ayresi*, which is very doubtfully distinct from the common *C. schænicola*. It is rather a novel idea to find Cetti's Warbler placed in the genus *Bradypterus*; but I believe that Mr. Tristram, our first authority on the *Sylviidæ* in this country, considers this its proper position. The *Bradypteri*, along with *Phlexis*, *Potamodus*, and some others, form a very natural subdivision of the Warblers, and may all be classified under the genus *Bradypterus*, the subdivisions being marked by the subgenera, as above indicated.

The author does not admit the distinctness of *Aedon familiaris* or *A. minor* from the common *A. galactodes*; and in this he is no doubt right. *A. minor* is probably not a good species, and *A. familiaris* only a climatic form, the grey shades of plumage being produced by the nature of the climate in the limited district in which the race has yet been found. It is a pleasure to find that many of the warblers will be figured; and although Dr. von Heuglin is evidently very well acquainted with this group, every one will feel grateful for the additional assistance of the plates to help us to understand these very puzzling little birds. *Acrocephalus arabicus* is a new species from Arabia, allied to *A. stentorius*, with which the author (J. f. O. 1861, p. 194) has before identified it.

Dr. von Heuglin separates a *Sylvia melanocephala minor* from the true *S. melanocephala*. He does not seem to have much faith in it as a species; for he does not give it a number of its own, but he identifies it with *S. bowmani*, Tristr., which, however closely allied, is a very distinct species, and one which has possibly never fallen under the author's notice. Then, too, *S. deserticola*, Tristr., is not the same as *S. nana*. If, as appears from the book, Dr. von Heuglin considers *S. crassirostris* to be identical with *S. olivetorum*, he is certainly wrong; for the bill and tail of the former present excellent specific characters. I do not quite understand these birds being retained under *Sylvia* instead of *Hypolais*, which genus is surely as distinct from the true *Sylvia* as are *Dryodromas*, Finsch & Hartl., and *Tricholais*, Heugl., from *Eremomela*.

Mr. Hume has lately shown (*anteà*, p. 286) that the Abyssinian *Anthus sordidus* is quite distinct from the Indian species to which that name has been applied; and an examination of specimens in the collections made by Messrs. Blanford and Jesse prove him to be right.

Dr. von Heuglin records three forms of *Pratincola rubicola* as occurring in North-eastern Africa, which he calls respectively *P. rubicola*, *P. rubicola hemprichi*, and *P. rubicola sibylla*, with which is united *P. pastor*, of which last I should like to see specimens from Abyssinia. In my opinion he is wrong in uniting *P. sibylla*, which is from Madagascar, and has white flanks, with *P. pastor*, in which they are rufous, the latter being the South-African representative of *P. rubicola*. Again, *P. pastor* seems to be distinguished from the true *P. rubicola* by the greater amount of white on the rump, the more general purity of the colours, and has also the middle of the abdomen and under tail-coverts very pure white, these parts being tinged with rufous in *P. rubicola*. Considerable uncertainty exists as to what is really the true *Saxicola isabellina* of Rüppell. From the figure given in that naturalist’s “Atlas,” Mr. Tristram and some others are inclined to consider it only the female of some other species, perhaps *S. monacha*. That it is so seems likely; and an examination of the type is desirable; for in the case of this supposition proving correct, the species must bear the name of *S. saltatrix*, Ménétr. To *S. frenata*, Heugl., a species of which the description is here for the first time published, the author refers, with doubt, *S. leucorrhœa* (Gm.), which last, from Senegambia, I have every reason to consider nothing more than our *S. ænanthe* in full autumn plumage. A new species, *S. finschi*, is described from Egypt and Siberia, of the validity of which I am far from being convinced. Both Dr. von Heuglin and Dr. Jerdon (B. Ind. i. p. 131) seem to regard the rufous under tail-coverts as the character distinguishing *S. lugens* from *S. leucomela*; but it does not hold good, as birds of the same species with white and rufous under tail-coverts can be found, and the difference consists mainly in the larger size of the former, and possibly, could the matter be investigated by some competent observer, in a difference in habits. The author seems

to be right in considering *S. pallida*, Rüpp., to be the young of *S. monacha*. *S. modesta* is a new species described for the first time; but the name cannot stand, since it was conferred some months previously on another bird by Mr. Tristram (Ibis, 1869, p. 206), unless Dr. von Heuglin can show that he had complied with the recognized rules in his application of it—rules which require rather more publicity than that afforded by its display in a museum, even though that museum be at Leyden. Again, his *S. scotocerca* cannot be recognized, that species being *Ruticilla fuscaudata*, Blanford (Ann. & Mag. N. H. 1st Nov. 1869, p. 329).

The *Turdidæ* of Dr. von Heuglin's work call for little remark; but I rather doubt if a comparison of the true *Ixus nigricans*, from South Africa, with Abyssinian specimens, would confirm the identity of the two species.

As regards the twelfth and thirteenth parts, which have just been received, I must notice that the care bestowed by the author in the revision of the former parts falls rather short here; and there are several clerical errors, which seem to point to more hurried composition, and somewhat mar the appearance of the printing. Having drawn the attention of the author to this omission, which the care exhibited in the former portion of the work renders the more conspicuous, I may proceed to observe that in the family *Ampelidæ* are included *Campephaga* and *Ceblepyris*. It would be a great boon if some one would define the limits of this family, which seems in the eyes of several ornithologists to be a refuge for the destitute, wherein may be lodged any kind of aberrant form whose place cannot be readily assigned. Thus we find in the 'Vögel Ost-Afrikas' *Bradyornis* placed here by Drs. Finsch and Hartlaub. Now *Bradyornis* appears to me to be more of an aberrant Chat than anything else, having certain allies in those peculiar African species which cluster in the neighbourhood of the true *Saxicolinæ*, and form a tangled knot around that subfamily. *Campephaga* and *Ceblepyris* I also regard as aberrant Shrikes; but I wish to give no positive opinion on this subject, as it requires more careful study and much further consideration than my present opportunities have permitted. To *Ceblepyris pectoralis* must be added our new *Campephaga anderssoni* (P. Z. S. 1870, p. 69, pl. 4) from Damaraland,

which is the female of that species. It is curious to find the South-African *Cebilepyris cæsia* placed as an inhabitant of North-Eastern Africa; but the author assures us that there can be no doubt as to the identity of the specimen in Prince Paul of Württemberg’s collection, on the authority of which the bird is included in the avifauna of North-eastern Africa. The *Muscicapa chocolatina* of Rüppell is now referred to the genus *Bradyornis*. Concerning this bird the latter author made the curious mistake of twice including it in his ‘Systematische Uebersicht’ (pp. 37 and 49), under the respective names of *Muscicapa chocolatina* and *Curruca chocolatina*! It is easy to imagine how the mistake came about; but it nevertheless proved a stumbling-block to ornithologists, who ought therefore to be not a little grateful for the elucidation of the error, especially as the identity of the species has been proved by an examination of the types. It is interesting to see that *M. semipartita*, Rüpp., is referred to *Cassinia*; but I am inclined to doubt its being strictly congeneric.

On the authority of a specimen obtained by Speke in Uniamuezi, *Terpsiphone mutata* is included in the present work. This, to say the least, is extraordinary; for although the coasts of Zanzibar and Mozambique exhibit certain Malagash affinities, I cannot at this moment recall another instance of a truly Malagash species occurring so far north as the above-mentioned locality. Dr. von Heuglin separates the North-eastern *Elninia* as distinct from the West-African *E. longicauda*, under the name of *E. longicauda minor*, which name he adopts in preference to his previously proposed name of *E. alexinæ*. With *Telephonus erythropterus* he includes the Algerian “Tschagra,” which, however, may be a distinct species, peculiar to Algeria; but it will be curious, if its specific distinctness be proved beyond a doubt, to find an isolated form of the truly African genus *Telephonus* resident within the limits of the Palearctic region. I must demur to the insertion of *T. trivirgatus* in the present work, on the authority of a specimen in the Berlin Museum; for I believe it to be strictly a southern form. Again, on the same authority, I must question *T. longirostris* being an Abyssinian bird. I very much doubt if this species, which I

cannot understand Mr. Layard identifying with *T. erythropterus* (B. S. Afr. p. 161), ever occurs to the north of the tropic of Capricorn. It, as well as *T. remigialis*, Finsch & Hartl., of which I have specimens, is an excellent species, most nearly allied to *T. cucullatus* of Algeria. I do not for one moment believe in the numerous species or races of *Lanius auriculatus* enumerated by various authors. I have examined specimens of the so-called *L. rutilans* of Temminck, from the River Gambia, and consider them to be nothing more than the common species in winter plumage. It seems pretty certain that the bird possesses a winter dress; for remains of it are to be traced on nearly every specimen shot on its first return to Europe. In the same way, I believe that *L. niloticus*, *L. pectoralis*, *L. jardinii*, and the variety "*dorso toto atro*" are nothing more than *L. auriculatus* in various stages of plumage.

L. collurio migrates to South Africa, where it was said by Levaillant to breed—a statement reproduced by Dr. von Heuglin without any mark of doubt, but it is probably not more true than any other of Levaillant's stories. To return to *L. auriculatus*, it does not seem to extend its range beyond North-eastern Africa and the Gold Coast on the west (*fide* Hartlaub); and more evidence than the existence of a specimen in the Stuttgart Museum is required to prove that it ever reaches South Africa. In a recent paper read before the Zoological Society, I have, in company with Mr. Dresser, put together a few notes on the Grey Shrikes, so that only a short commentary is needful here. Were it not that Dr. von Heuglin expressly states that he himself obtained the *L. excubitor* in Egypt and Arabia Petraea, we should have been sceptical as to its ever occurring so far south; and it is to be hoped that he can refer to specimens to prove the fact. On the other hand, the bird mentioned by Mr. Tristram (Ibis, 1867, p. 364) turns out to be not *L. excubitor*, but *L. lahtora*. Dr. von Heuglin is quite right not to include *L. algeriensis* among the birds of North-eastern Africa, although Strickland recorded it from Kordofan. The species is, however, resident in Algeria; and probably the young *L. lahtora* (*L. fallax*, Finsch & Hartlaub), with the under parts greyish, was mistaken for it. On the authority of W. von Müller, who states that *L.*

meridionalis extends in North-eastern Africa as far southward as Sennaar, that species is accorded a place in the present work ; but the author reasonably doubts the truth of the statement, which I also regard as an error. For what is usually known to European naturalists as *L. dealbatus* (which name, by-the-by, ought always to have given way to *L. pallens* of Cassin), Dr. von Heuglin seeks to revive a name casually given by Hemprich and Ehrenberg to a bird which they supposed to be a hybrid Shrike, and called *L. leucopygus*. Were this name worthy of consideration (no description or attempt at a definition having been given), it would take precedence over Col. Sykes's name of *L. lahtora*, which Mr. Dresser and I have shown to be positively identical with *L. pallens* ; but the name cannot be admitted. The recently described *L. hemileucurus*, Finsch & Hartlaub, and *L. fallax* of the same authors, are nothing more than *L. lahtora* in the very old and young plumages ; and I have examples of both positively identical with Indian specimens. I agree with our author in questioning the occurrence, on Dr. A. E. Brehm's authority, of *L. smithi* in North-eastern Africa.

This closes my remarks for the present on this very interesting work ; but I cannot conclude without calling special attention to two points which demand particular notice. These are, first, the very elaborate Latin diagnoses given to all the species ; and, secondly, the very carefully executed plates. In his choice of subjects, Dr. von Heuglin has made a judicious selection of rare and unfigured birds ; and no one requires to be told what an assistance a plate is in determining species. In his attitudes, he shows himself to be well acquainted with the habits of birds, while the evident care bestowed on the execution of the plates cannot be too highly commended.

XXXI.—Letters, Announcements, &c.

We have received the following letters addressed "To the Editor of 'The Ibis'":—

February 2nd, 1870.

SIR,—A small collection of birds, kindly presented to my museum by Mr. Valentine Irwin, who collected them in Tip-

perah, Eastern Bengal, contains one remarkable novelty, *Hydrochelidon leucoptera*, a beautiful specimen in full plumage. There can be no doubt of the species; for it corresponds with Yarrell's figure and description (B. B. 3d ed. iii. pp. 532-536), except that the dimensions are larger than those he gives. Length 9·4 in., wing from carpal joint 8·3, bill from front 1, from gape 1·35. It has the black under wing-coverts, the pure white tail, and upper and under tail-coverts, and deep black head, neck, throat, breast and abdomen. It is possible that this species has already been noticed by some other observer; but I believe it to be new to our avifauna.

Then he has brought me several specimens of an *Arachnechthra*, which he fancied was *A. lotenia*; but it is smaller, and has the deep purple-black abdomen of *A. currucaria*, which these specimens in fact resemble in every particular, except that they are slightly larger, and their bills conspicuously so. This difference is constant, and, coupled with the somewhat larger and more brilliant axillary tufts, seems to demand specific separation. The difference in the bills of the two races is most marked. Taking Mr. Gould's figures (B. As. pt. vii.) of *A. currucaria* and *A. lotenia*, the bill of

A. INTERMEDIA,

as I propose designating the Tipperah race, is exactly intermediate, and these figures correspond accurately with numerous specimens in my collection. Actual measurements scarcely convey an adequate idea of the marked difference in size; but I subjoin the lengths, measured with compasses, from the forehead to the tip of the upper mandible, in eleven specimens, from various localities, of *A. currucaria*, and six of *A. intermedia* from Tipperah:—

A. currucaria.

Mirzapoor, ♂	·7	Kotegurh, ♂	·64
Gorgaon, „	·64	„ „	·6
Lahore „	·63	„ „	·6
Simlah „	·65	„ „	·6
„ „	·62	Muthra ♀	·6
„ „	·6		

A. intermedia.

♂ ·8, ♂ ·73, ♂ ·73, ♂ ·72; ♀ ·73, ♀ ·72.

I may add that, out of twenty other specimens of *A. curruccaria* obtained in Upper India in only one did the bill exceed '64, and in this case it measured only '67. Out of thirty-one specimens, in only one does the bill exceed '67; and in that one it measures '7. This is a Mirzapoor specimen. I have no Lower-Bengal specimens with which to compare; and it is possible that there is a gradual increase in size as we go eastwards. One point is worth noticing: Mr. Gould's figure of *A. curruccaria* (= *asiatica*) truly represents the bill of the species we meet with all over Upper India; but Swainson's figure (Nat. Libr. xiii. pl. 24) of *A. mahrattensis*, which has always been identified with *A. asiatica*, represents a bill far more nearly approaching that of my *A. intermedia* from Tipperah.

It would be useful if ornithologists at home would compare specimens in the various European museums, and see if the two forms do grade into each other. As far as my collection goes, any child would at once pick the six Tipperah specimens out of the thirty Upper-Indian ones, on account of their much larger bills, somewhat larger size, and larger and more orange axillary tufts.

Thalasseus cristatus is another bird which the collection contains, and which I have never before seen from Tipperah. Besides this, there is a lovely *Leptocoma hasselti*, numbers of *Chalcoparia phænicotis*, a pair of *Xantholema cyanotis* (Blyth), differing in the blue ear-coverts from *X. trimaculata* (J. E. Gray), in which they are black, *Turnix maculosus*, Temm., *Gallophasis horsfieldi*, the true *Erythrostera leucura* (*E. parva* being the only species that we obtain in Upper India), *Harpactes hodgsoni*, *Merops quinticolor*, *Chrysocolaptes delesserti* (not *C. sultaneus*, which is confined to the Himalayas), *Gecinus viridanus*, *Zanclostomus tristis*, *Dicaeum chrysorrhæum*, *Lanius cristatus*, *Pericrocotus flammeus*, *Artamus fuscus*, *Alcippe pæocephala*, *Trichostoma abbotti*, and *Mixornis rubricapillus* (both very common in Tipperah), *Garrulax moniliger*, *Iole virescens*, *Brachypodius melanocephalus*, *Irena puella*, more specimens of my new *Prinia humilis* [*suprà*, p. 144], *Phylloscopus fuscatus*, *Henicurus immaculatus*, *Calornis affinis*, *Munia rubronigra* and *M. acuticauda*, *Mirafra assamica*, *Osmotreron*

bicincta and *O. phayrii*, the true *Turtur meena*, which I have never before seen, with the rich vinaceous tinge on the breast, and deep slaty-ash lower tail-coverts (the so-called *T. meena* of Hutton and all other writers on Himalayan birds, from Almora to Murree, is, I feel certain, nothing more than *T. rupicola*), *Arboricola atrigularis*, *Rallus indicus*, *Ardetta flavicollis*, and *A. cinnamomea*, both very common there, with eggs of each, and also eggs of *Gallicrex cristata*. Mr. Irwin also informed me that, in the Sunderbunds, he procured both *Todirhamphus chloris* and *Halcyon atricapilla*, and that he saw *Tadorna scutellata* in the Megria, but failed, owing to its extreme wariness, to procure specimens.

Finally, I may note that *Daption capensis* must probably be added to our Indian avifauna, as, through Mr. H. R. P. Carter, Deputy Chief Engineer of the Madras Railway, I received a specimen from Mr. Theobald, killed between Ceylon and the mainland. It must have been a mere straggler; but still its occurrence as such, so far north of the equator, seems worthy of record.

Yours truly,

ALLAN HUME.

March 8th, 1870.

SIR,—Number ii. of part I. of my 'Rough Notes,' in which I conclude the *Raptores* (including those of Ceylon, Burmah, Assam, and so forth not noticed by Dr. Jerdon), is in the press, and will reach you sooner or later. It contains notices of three species, which are either new or new to our Indian avifauna. The first is a large Sea-Eagle, which, on account of its large size and massive bill (it is a true *Haliaetus*), I was at first inclined to identify with *H. pelagicus*, but, I now incline to suppose, may be a particularly fine *H. albicilla*. I have only two specimens, both young, and procured by myself in Upper India. Adults will probably be obtained hereafter, enabling us to make sure of the species. In case it should prove new, I designate it *HALIAETUS BROOKSI*, after my valued friend Mr. W. E. Brooks, who has recently procured a third example. The second is a large Kite, fully as big as *Milvus iclinus*,—a female, measuring fully 27·5

inches in length, and with wings of 21.5. I have four specimens of this bird, old and young, and name it *MILVUS MAJOR*. Besides differing somewhat in plumage, and vastly in size, its haunts and habits are different from those of the common *M. govinda*. The third is a fine Scops-Owl, as large as *Ephialtes lettia* (Hodgs.), but feathered as far as, and sometimes even halfway down, the terminal joint of the toes. I have called this *EPHIALTES PLUMIPES*. It is very distinct from any of our other Indian birds belonging to this group.

Yours truly,

ALLAN HUME.

SIR,—As not much seems to be known in England of the nidification and habits of the Flamingo in the south of France*, I am in hope that the following notes may be of interest to your readers.

On my return this spring from Cannes, I went to Arles, to obtain some information on the subject. There I found a friend, whose acquaintance I had formerly made, ill with the gout; but he did more for me from his chair than he had ever done when able to walk. I began by going to the Museum, the existence of which I now learnt for the first time, and I got in with the assistance of a letter from my friend. The room had been locked up some months—perhaps years ago, as the room next it, a sort of vestibule, was wanted for the fire-engine! I found the ruins of an interesting local collection, the usual quantity of monkeys, Birds-of-paradise, and so forth. There is a female beaver, with two young, from the Rhône, and three Flamingos, with an egg. Then I hunted up the Director, a quaint little old man, who began by showing me his fig-tree, then played a tune on an organ of his own making, and at last condescended to talk about Flamingos. To his other vocations he had once added that of a bird-stuffer. His information came to this, that, as far as the birds went, they could be got easily enough, but that the eggs were a far more difficult matter.

I then went back to my friend, who said he thought it quite

* Cf. Crespon, 'Ornithologie du Gard,' pp. 395, 396.

likely that some eggs might be preserved in the country-house of a friend of his who lived away in the Camargue, some dozen or more miles from Arles. So I got a carriage and drove to his house, a farm close to the great Etang du Valcarès, the largest of the many salt or brackish lakes that lie in the delta of the Rhône. Camargue, or Ile de la Camargue, is the name given to the fen-country on the right bank of that river, between it and the Petit Rhône. Its northern portion is very rich and well cultivated; but the southern districts are mere moor or brackish marshes, interspersed with vast lakes; and then a long line of dunes marks where the land ends and the sea begins. The Valcarès is seven or eight miles by about half that width, but with a depth of not more than three feet in any part. A chain of sand-banks, on which rushes and so forth grow scantily, divides it from the Etang du Fournelet, a salt-lake of much less extent. Here there are salt-works; and a dyke has been lately made to hinder the comparatively fresh water of the Valcarès from spoiling the pure salt of the Fournelet. When I arrived at the farm-house, I found I had just missed its owner. I saw his mother, however, from whom I learnt that there were no eggs there. So on I went to see the lake, and gain what information I could. I soon met a boatman, who told me that the Flamingos used to lay their eggs on the sand-banks between Valcarès and Fournelet, where you would pick them up "*comme des coquillages sur les bords de la mer*," as many as three score at a time, that there was no nest, and that the young, he believed, were hatched by the heat of the sun! This year he had seen very few birds, if any. Thence I proceeded to another farm on the isthmus between Valcarès and Fournelet, where I conversed with a herdsman who had been fifteen years on the property. He had seen some Flamingos that very day, and for some days previously—about forty, flying from Fournelet to Valcarès in the morning and back at night. Valcarès is full of a small variety of the common cockle (*Cardium edule*), on which the birds feed, and they drink at the streams that flow into the lake. It is the custom for sportsmen to "lie up" near one of their drinking-places and wait for them. As many as seven have been killed at one shot. He had never seen or heard of eggs. The

birds come at the beginning of February, and stay till October or November. He had often seen the Valcarès white with them. I took a long walk with him in the hope of seeing a bird; but no; there was a *mistral* blowing, and on such occasions they remain out in the lake. I saw several hundred Ducks, a Heron, a Curlew, some Sandpipers, and innumerable Lapwings and Seagulls, but no Flamingo!

Thence I was jolted back to Arles over the worst road that ever carriage was driven on, and sought out the gentleman I had missed at his house. Him I found a very hearty good fellow, fond of natural history, and disposed to help me in any way. He told me that Flamingos still come in as great multitudes as ever: they inhabit only Valcarès, Fournelet, and Faraman—that is to say, about one-third of the lakes; and they never did visit any others. They continue arriving all spring and summer, and in August and September from one to two thousand are on the lakes. In October they mostly leave; but a few stragglers stay throughout the winter. They are now much more persecuted than formerly. Twenty years ago there were not more than fifteen *chasseurs* in Arles; now there is a couple of thousand, and the birds are wary and restless; still they are so abundant that their cries may be heard a mile off. When he was a young fellow, about twenty years ago, he saw some old nests on the sand-banks between Valcarès and the sea, which, he was told by an old fowler, belonged to Flamingos. They were of sand heaped up, about two feet in diameter at the base and about ten inches high, rapidly tapering, so that the depression in which the eggs would be laid would not be more than ten inches across*. He saw some twelve or fifteen nests in the space of a mile or more. It was a tradition in those days that young Flamingos used to be hunted on horseback; but the Camargue was not then what it is now. It was scarcely cultivated; there were no salt-pans, and there were very few *chasseurs*. His belief is that the birds will never build there again; but that eggs may be got every year, because females arrive gravid, lay their egg anywhere, and leave it. He gave me some other interesting particulars of the fauna of the Camargue, and

* On this the hen sat, "Monsieur, comme sur une vase!"

dilated much on the *Ganga d'Afrique*, in *patois* "Gandoule"—which he seemed to think far more curious than a Flamingo.

Hoping that this long story may be worth the telling,

I am, &c.,

J. W. CLARK.

Museum of Zoology and Comparative Anatomy,
Cambridge, March 1870.

Harlem, March 27, 1870.

SIR,—On reading the letter addressed to you by Mr. Sharpe (*suprà*, pp. 152, 153), containing a note by Prof. Sundevall on *Parus caudatus*, L., I am reminded that I had still to write to you concerning that species, particularly with reference to Mr. Sharpe's previous communication (*Ibis*, 1868, pp. 295–302). I regret that he has been led into error by Mr. Keulemans's information, to the effect that the Long-tailed Titmouse seldom breeds in Holland, and only abounds in this country from October to March. Every Dutch ornithologist who has made observations for himself in the country knows that this bird is very common here even in the breeding-season, particularly in the woods along the dunes. Like others of the same group, it does not undertake long migrations, but leaves its breeding-haunts in autumn to approach human dwellings, and even penetrates to the interior of towns. Nor can I agree with Mr. Sharpe as to the specific distinctness of the British and the Continental Long-tailed Titmouse, which I am more inclined to regard as local varieties of the same species. Individuals indigenous to each part of Europe, if compared, would form a series of modifications of the same type, the English and Scandinavian birds being the most extreme forms. According to French authors, such as Degland and Gerbe (*Orn. Eur.* 2^{me} éd. i. p. 571), and Jaubert and Barthélemy-Lapommeraye (*Rich. Orn. Mid. Fr.* p. 186) the Long-tailed Titmouse of their country differs essentially from the northern one by never having a pure white head, and accordingly would somewhat resemble the British bird, the males only being distinguishable by the blackish and reddish markings on the head and the absence of the dark band over the eye, which always exists in both sexes of the British

bird and in the females of the French. Females from the Alps, according to Bailly (Orn. Sav. iii. p. 81) also seem to have the dark band at all ages; but the males somewhat resemble Scandinavian examples of the same sex in their white head. The Long-tailed Titmice of Germany and Holland are most like those of the north of Europe, both sexes when adult having the head white, as shown long since by Naumann and Prof. Schlegel in their excellent works on the birds of those countries. I think, however, that the Scandinavian females lose the dark band sooner than do those of our neighbourhood; for I have often met with breeding females here which still possessed the blackish colour on the sides of the head. I am &c.,

J. P. VAN WICKEVOORT CROMMELIN.

Cape Town, May 2, 1870.

SIR,—Permit me to notice in your pages a fine addition to the avifauna of South Africa, which has been lately made by my friends Dr. Edward Atherstone and Messrs. F. and H. Barber of Graham's Town. Those gentlemen, on a recent trip to the Kleinmont river-mouth procured a fine pair (♂ and ♀) of that handsome Bittern, *Calherodius cucullatus* (Licht.), Bp., Consp. Av. ii. p. 139; *Ardea leuconotus*, Wagl. This seems a great extension of range for this species; but the "illustrious stranger" is welcome to his place among the birds of South Africa.

I am, &c.,

E. L. LAYARD.

Bremen, May 26, 1870.

SIR,—Will you allow me room for two remarks on the last numbers of 'The Ibis'?

(1) The *Nectarinia fantensis* of Mr. Sharpe (*suprà*, p. 52) was fully described by me in the 'Journal für Ornithologie' for 1861 (pp. 108, 109), under the name of *N. phæothorax*. I had two specimens, both from Ashantee, and gave one to M. Jules Verreaux.

(2) The *Numida verreauxi* of Mr. Elliot (*suprà*, p. 300) was introduced and described by me in the same journal for 1867

(pp. 36, 37) as "*N. eduardi*, J. Verr.;" but I must add that it remains, in my opinion, a doubtful species. I am, &c.,

Dr. G. HARTLAUB.

Greatham, 1 June, 1870.

SIR,—In accordance with Signor Salvadori's suggestion (*suprà*, p. 154) I have compared my type-specimen of *Megalophonus anderssoni* (Ibis, 1869, p. 435) with the diagnosis of his *M. rufocinnamomeus* (Atti Soc. Ital. 1865, p. 578); and I find that the two species are widely different in general measurements, relative proportion of tarsi, and coloration. The deep-chestnut cap of my bird, besides its much smaller size, will distinguish them at a glance.

I have now to describe a new Indian Warbler, lately obtained by Mr. Yeatman in the forest at Pillenbheet in the North-west Provinces, and sent to me by Mr. Brooks. I propose to name it

CALLIOPE YEATMANI, sp. nov.

C. supra olivaceo-brunnea; fronte et linea superciliari albidis; tectricibus inferioribus pallido-fusco terminatis vittam transversam formantibus; gula mentoque albidis; pectore fusco; abdomine et subalaribus albidis; hypochondriis et crisso pallide russatis; rostro brunneo, pedibus pallidis.

Long tot. 5, alæ 2·75, caud. 2·25, rostri a rict. ·65, tarsi 1, dig. med. ·75, halluc. ·55, poll. angl.

This species is an exact miniature of *C. kamtschatkensis*; but the type-specimen, having been obtained in autumn, wants the beautiful red throat, which, however, may be assumed in breeding-plumage. The first primary is 1 inch shorter than the second, which is equal to the seventh; the third and fourth are the longest. The tarsi and feet are very large and strong, more so relatively than in the other species.

I remain, &c.,

H. B. TRISTRAM.

Marldon, 13 June, 1870.

SIR,—In 'The Ibis' for 1868 (p. 356) I made mention of a

supposed undescribed Harrier from the Philippine Islands, and of another from the same locality identified by Prof. Schlegel (Mus. P.-B. *Circi*, p. 3) with the North-American *Circus hudsonius*. When I visited the Museum at Leyden some months since, I found that these two birds belonged to one and the same species, and on a closer examination of the Leyden specimen I was convinced that it is merely an example of *C. melanoleucus* in immature plumage. On mentioning this opinion to Prof. Schlegel, I was glad to find that he agreed in my view, as did also Mr. Blyth, who was at Leyden at the same time as myself. I am, yours &c.,

J. H. GURNEY.

SIR,—During my last visit to Egypt I procured two birds, which do not appear to have been hitherto described. I therefore take the present opportunity of bringing them to the notice of ornithologists. The first I propose to call

CYPSELUS PALLIDUS, sp. nov.

C. Cypselo apodi affinis, sed minor; pallide grisescenti-brunneus; gutture toto albo; pectore inferiore obsolete albo-marginato.

Long tot. 6·5, alæ 6·5, caudæ 2·8 poll. angl.

Above uniform brownish-grey, slightly inclining to white on the forehead and over the eye, in front of the eye blackish, wing-coverts greyish-brown, with an obsolete white edging, primary coverts rather darker; quills dark greyish-brown, paler on the inner webs, the outer web (especially of the primaries) very dark (almost black on the last-mentioned feathers), tail greyish-brown, uniform with the breast; checks and sides of the neck pale greyish-brown; entire throat white, and under-surface of the body dark greyish-brown, the feathers on the lower part of the breast having obsolete white tips.

I have been for some time convinced that the common Swift of Egypt forms an entirely distinct species from the well-known *C. apus*, under which name it has been included in the various lists of Egyptian birds. First, it differs materially in the very pale brown of the entire body, and in the greater extent of white on the throat. These constitute the most striking characters,

whereby it may be distinguished from *C. apus*. Furthermore the feet are smaller; indeed the bird is altogether smaller in bulk.

I believe that *C. apus* seldom appears in Egypt. Of the thousands of Swifts which I have seen in Egypt, I could never detect a single dark specimen, although I paid particular attention to the species, in order to confute the opinion of several naturalists at home, who were inclined to consider the Egyptian species identical with *C. apus*. If, therefore, I saw any bird, out of the hundreds flying round me, which appeared to be a trifle darker than ordinary, I immediately shot it; but on every occasion the bird thus obtained turned out to be *C. pallidus*. Mr. E. C. Taylor (*Ibis*, 1867, p. 56) has already noticed the difference between the Swifts of Egypt and Europe.

Again, several ornithologists were inclined at first to put down any Egyptian specimens as the young of *C. apus*; but it is impossible for that opinion to be correct, since I have shot *C. pallidus* as late as the 3rd of May and as early as the 12th of February. Comparing my specimens also with a young specimen of *C. apus*, shot on the 27th of August, the colour of the latter is very much darker, and all the feathers have distinct white margins.

I have a further corroboration to adduce as regards the distinctness of *C. pallidus*, proving also its claim to a place in the European avifauna. Major Irby lately brought from Tangiers a specimen of a Swift which he had set down as not being the common *C. apus*. He stated that it arrived long before the latter species in Tangiers and Southern Spain, and from his observations he was convinced of their being distinct species. On comparing his specimen with my Egyptian bird, the two were found to agree exactly; so that when we receive further evidence as to the date of its arrival in Southern Europe, I think that ornithologists will have no difficulty in according specific rank to *C. pallidus*. An opportunity of comparing the species will, it is hoped, be given before long in the plates, which will accompany the projected work on the Birds of Europe of Messrs. Sharpe and Dresser.

The second I will name

TURTUR SHARPII, sp. nov.

T. Turturi aurito affinis, sed pileo clare fulvo ; dorso uropygioque rufescenti-ochraceis ; rectrices extimæ pogonio externo basin versus nigricante ; rectricibus mediis ochraceis.

Long. tot. 11·5, alæ 6, caudæ 4·75, tarsi ·8, poll. angl.

The chief points of difference between this new species and the common *T. auritus* may be summed up as follows:—In marking it is very similar to the last-named bird, but has not the slightest blue tinge on the head and back. The head is of a pale yellowish-brown, lighter beneath, shading gradually on the chest into rich pink, which again fades into white towards the vent. The under tail-coverts are white; the rump and upper tail-coverts are broadly edged with yellowish-brown. The exterior web of the outer tail-feather is stained with brownish-black at a distance of about an inch and a half from the tip, while in *T. auritus* this web is pure white, and in *T. ægyptiacus* half of it is black. The two middle tail-feathers are broadly edged with yellowish-brown, and the two or three next feathers on each side have their white tips partially marked with the same colour, while in *T. auritus* the middle tail-feathers are barely tipped with brown, which is of a slaty hue, and the succeeding feathers have their white tips faintly shaded with the same colour.

The length of the wing from the carpus in *T. auritus* is from 6·75 to 7 inches, and in *T. ægyptiacus* only 5 inches; and thus in this respect *T. sharpii* is intermediate as in its plumage between them. The same is to be said of its habits. It arrives in Egypt in the beginning of March; and when I was at Assouan in April, it was by far the most abundant. On the 15th of April, 60 out of 62 Doves that we killed on one of the islands of the First Cataract were of this species; it was then breeding abundantly, most of the nests containing young. I did not meet with *T. auritus* in Egypt until the 20th of April, when I saw a flock of four, and on each succeeding day found them in greater abundance. I feel sure that that species had then only just arrived, and had not begun breeding; for it can easily be distinguished from *T. sharpii*, even at a considerable

distance, owing to the grey, smoky hue which pervades its plumage. It also flies more quickly, is much shyer, and is a rather heavier bird than *T. sharpii*, the habits of which more closely resemble those of *T. aegyptiacus*.

I am, &c.,

G. ERNEST SHELLEY.

Zoology has lost one of its brightest and most steady lights by the death, on the 26th of May last, of Dr. J. H. BLASIUS, Professor of the Natural Sciences in the Caroline College of Brunswick and Director of its Ducal Museum. Setting aside his other labours, which were neither few nor inconspicuous, the deceased will be best known to our readers by his papers—"On the Diversity in the Estimate of the European Ornis, and its Causes," and his "Ornithological Letter on Heligoland," of which translations appeared in the old series of this Journal (*Ibis*, 1861, pp. 292-302; 1862, pp. 58-72), by his continuation, jointly with Dr. Baldamus, of Naumann's 'Vögel Deutschlands' formerly reviewed by us (*Ibis*, 1862, pp. 40-58), and by his useful 'List of the Birds of Europe,' also noticed in these pages (*Ibis*, 1863, pp. 350-352). It had long been hoped that he would bring out, as a companion to his excellent 'Säugethiere Deutschlands,' a similar volume on the birds of Germany, for which, as is known, he had amassed a large stock of materials, and thus completed a work for which no one was more competent; but his attention had latterly been turned to, and his time occupied by, other pursuits; and for the last seven or eight years, we believe, he published little, if any thing, on Zoology. Had he been able to give the world the fruits of the labour he had expended on this subject, his book on German mammals shows how well executed it would have been. He was most deservedly esteemed as one of the highest authorities on European Ornithology; and, though we could not always agree with his views, especially his principles of nomenclature, the judicial faculty which he possessed in no common degree entitled his opinions to the greatest consideration, and we deeply regret the sudden blow which has removed from among us so learned and so accurate a man of science.

THE IBIS.

NEW SERIES.

No. XXIV. OCTOBER 1870.

XXXII.—*Notes on various Birds observed in Italian Museums in 1866.* By the Baron DE SELYS-LONGCHAMPS, Member of the Royal Academy of Belgium.

I HAVE read with much interest Mr. Howard Saunders's "Notes on the Ornithology of Italy and Spain" (*Ibis*, 1869, pp. 391-403); and their perusal has suggested to me the idea of offering some observations of the same kind made by me in January 1866, when charged by the Belgian government with a mission to the King of Italy.

The time allotted to me having been very short, I was only able to visit a few museums; but I was particularly struck with the increase of scientific wealth which had accrued since the period (from 1838 to 1840) during which I had more leisurely traversed nearly the whole of Italy. In 1866 I only revisited Turin, Milan, Florence, Sienna, Pisa, and Genoa.

The ornithological part of the Turin Museum is under the intelligent direction of Count Salvadori, so well known by his excellent works, in which he has studied, amongst others, the rare and doubtful species of Sardinia, Liguria, and Lombardy, and thus rendered signal service to those who are busied with European ornithology.

The magnificent museum of Turin possesses a fine specimen of *Alca impennis*; and that I may not have to return to this sub-

ject, I will say here that I saw a second in the collection of the Count Ercole Turati at Milan, a third equally superb in the Museum of Florence, and a fourth in that of the University of Pisa. An example once possessed by King Victor Emmanuel, in his collection at Veneria Reale, he presented (at the request of his son-in-law, the King of Portugal, also distinguished as a patron of ornithology) to the Museum of Lisbon, where it now is*. This specimen formerly belonged to the Marquis de Brême, Grand Master of the Royal Household, who gave the King of Italy his rich collection of European birds at present deposited at Veneria Reale, wherein its place is now, it appears, taken by the specimen once the property of the late Pastor Brehm [*suprà*, p. 258].

I will take this opportunity of mentioning that in 1840, when attending the meeting at Turin of Italian *savans*, I obtained from the late M. Verany the example of *Alca impennis* which is now in my collection. It had been left with him for sale on commission by, I think, M. Verreaux, if my memory does not deceive me. All the specimens I have mentioned are in breeding-plumage, as is also that in the Museum of Brussels, obtained from the administration of the Viscount Bernard du Bus.

While on the subject of extinct birds I may state that I saw in Italy two examples of *Nestor productus*—one in the Museum of Count Turati, the other in that of Florence.

Among the birds of the Turin Museum, though I do not mean to dwell longer on exotic species, I examined *Hypocolius ampelinus* (*cf.* *Ibis*, 1868, pp. 181–183, pl. v.), which seems to me to belong evidently to the family *Coliidae*. It differs from the genus *Colius* in its longer bill and squarer tail.

M. Salvadori showed me a *Sylvia* from Crete, which resembles *S. rueppelli*, but seems to me to form a smaller race. He informs me that in Piedmont neither *Emberiza pyrrhuloides* nor the typical *E. schæniclus* occurs, but only *E. intermedia*, with the bill swollen, rather variable, and often passing into that of *E. schæniclus*. He lastly made me remark that the *Corvus cornix* which breeds on the coast of Liguria seems to be derived from *C. corone*. Specimens are often black, with grey on the breast

* *Ibis*, 1868, p. 457.

only; others have grey on the back, but the upper and lower tail-coverts are black. In Sardinia, on the contrary, the *C. cornix* resembles the light-grey type of Northern Europe which winters in Belgium.

The collection of Count Turati at Milan is of incredible wealth. So far as concerns European birds, I remarked first *Synæcus lodoisiæ**, which made the same impression upon me as upon Mr. Saunders; and I believe that M. Jules Verreaux himself now regards it as an accidental variety of *Coturnix communis*, the more so as an example in an intermediate stage of plumage has been taken in France. Are there not many pretended kinds of birds which ornithologists could not distinguish if they were shown the types deprived of certain unimportant details of coloration, upon which they have in fact been founded? M. Turati possesses a *Garrulus melanocephalus (cervicalis)*, the Algerian form, which was given to him as coming from Spain. If the locality be correct, this is an addition to the European fauna. I remarked also a very singular example of *Motacilla alba* from Lombardy. It is in breeding-plumage, and resembles French specimens, except that it has a black streak over the ear from the eye to the nape, which marks out a white semisupercilium, so that the head resembles that of the Japanese *M. lugens*, except that in the latter the black streak exists likewise between the bill and the eye. M. Turati has collected in Lombardy extremely small examples of *Phyllopneuste rufa*, which seem to him to form a separate race.

In the Royal Museum at Florence I admired the two species of which I have already spoken. The collection of birds, as Mr. Saunders justly says, is not up to the mark of those at Turin and Pisa; but the museum contains a magnificent palæontological series, admirably directed by MM. Igino Cocchi and Cesare d'Ancona.

It was with real satisfaction that I read in 'The Ibis' the praise accorded to the splendid Museum of Pisa, created, in some sort, and directed by the venerable Professor Paolo Savi; and I had experience of the same feeling in 1866, when revisiting (after a space of eight and twenty years) this establish-

* [Cf. Ibis, 1862, p. 380.—ED.]

ment, where, in March 1838, I had been initiated by the same *savani* in the ornithological wealth of the Italian fauna.

This time he showed me some new acquisitions among birds of accidental passage in Italy :—the American *Coccyzus erythrophthalmus* (Wils.), killed at Lucca* ; *Porphyrio alleni*, Thomps., taken also at the same place, an immature specimen, in coloration agreeing with the young of *Rallus aquaticus* ; *Hypolais elatica*, killed at Sarzana, and the subject of a memoir by Dr. Francesco Magni-Groffi, professor at Cremona. In the museum at Pisa there is a bird that differs from *Turdus merula* in that the male never becomes quite black, and that the female has the breast of a more lively red. Prof. Savi calls it the “Merle maritime,” and believes that it comes from Africa. I saw also a female of *Loxia curvirostra*, from Pisa, with a bill still more slender than that of the American race named *L. americana*.

Without speaking of *Budytes cinereocapilla*, the common Italian race, and *B. melanocephala* ; which is seen there accidentally, I remarked two curious varieties :—the first a *B. flavus*, with a yellow throat, as in the common type, but wanting the white supercilium as in *B. cinereocapilla* ; the second a *B. melanocephala*, with a white throat as in *B. cinereocapilla*. The more I consider the *Motacilla* and *Budytes* of the types *alba* and *flavus* in a Linnæan sense, the more I am persuaded that in Europe one must regard *M. yarrelli* as a race of *M. alba* and *B. cinereocapilla*, *B. melanocephala* and *B. flaveolus* as races of *B. flavus*.

These races are *local* ; but as is the case with *migratory* birds, it happens that the different races come in contact, and that, in localities where individuals find themselves separated, they mate with individuals of the local race proper to the country. Of these matches crosses are the result, which, according to my views, are mules and not hybrids ; still less are they new local varieties. In my collection I have examples intermediate between the races I have just mentioned ; and these seem to justify my theory. I have likewise collected a pretty good number of specimens of *Motacilla* and *Budytes*

* It would be important to ascertain if, among the examples of *Coccyzus* killed in Ireland and England, and referred to *C. americanus*, there may not be some of *C. erythrophthalmus*.

from Siberia, Japan, China, and India, and I have met with several individuals difficult to class. These lead me to think that here also the number of *true* species is not great, but that, as in Europe, *local races* exist which, by accidental crossing, produce intermediate mules, difficult to class.

The exotic bird ticketed in the Pisa Museum with the name of *Mormon glacialis* is *M. corniculatus*. I have seen the same thing in the collection of M. Marchand, at Chartres. *M. corniculatus* is also the species described by M. Gerbe under the name of *M. glacialis* in the second edition of Degland's work*. I have examined these three specimens, which can be easily distinguished by the direction of the grooves on the bill and the black collar in front touching the base of the bill.

Prof. Savi, who, more than forty years ago, announced the appearance in Europe of *Hirundo daurica*, L. (*H. alpestris*, Pall.), was right in his determination. Having examined many examples from Asia and the south of Europe, I am convinced that *H. rufula*, Temm., does not differ, even as a race, from the former, contrary to what I have advanced in my notice of the subgenus *Cecropis* published in 1855 in the 'Bulletin' of the Belgian Academy.

Throughout my travels I everywhere collected information respecting the *Columba turricola* of Bonaparte,—a species which, according to him, is very common in the old ruined towers of Tuscany, and differs from *C. livia* in that the rump is not *white* above, but *bluish*, as in *C. ænas*. The naturalists of Turin, Milan and Florence whom I have consulted, do not recognise

* [Orn. Eur. 2me éd. ii. p. 609. There is a slight mistake here. M. Gerbe describes his bird under the name of *Fratercula corniculata*, and very justly says it is identical with that figured by Mr. Gould under the name of *M. glacialis*; but then M. Gerbe proceeds to say (*tom. cit.* p. 611) that the *F. glacialis* of Leach is probably only an individual variety of *F. arctica*, and that *F. corniculata* occurs not only in Kantschatka, but also in Spitsbergen, Greenland, Newfoundland, and Norway. That *F. glacialis* is not an individual variety is very evident from the fact of all the Spitsbergen birds belonging to that form—whether it is to be regarded as a good species is a question on which naturalists must please themselves: but it is entirely distinct from *F. corniculata*, which last, we feel sure, has never occurred in Europe (*cf.* Ibis, 1865, pp. 213, 521–524).—ED.]

it, or regard it as an accidental variety of the half-wild *C. livia* crossed with tame Pigeons. I examined a specimen in the Museum at Pisa; and Prof. Savi is now inclined to the opinion I have just expressed.

It may be mentioned that, to found and name this race or doubtful species, Bonaparte (Consp. Av. ii. p. 47) has taken as his base the article of Prof. Savi (Orn. Tosc. ii. p. 160), where, under the name of *Columba livia*, "*Piccion Torrajolo*," he in 1829 described and gave a good figure of *C. turricola*, remarking at the same time on its difference from Temminck's *C. livia*. Later, in 1831, he (*op. cit.* iii. p. 227) noticed the true *C. livia* with the white rump.

Bonaparte refers to *C. turricola*, a Pigeon from Persia, in the Museum of St. Petersburg, which I have also seen in that of Count Turati, but have not been able to compare with the *C. turricola* at Pisa. I somewhat doubt whether these Asiatic examples differ from the *C. intermedia* of Strickland (1844). M. Gerbe (Orn. Eur. 2me éd. ii. p. 11) regards also *C. turricola* as a variety of *C. livia*, and says that if it were a species it would be necessary to restore the name of *saxatilis*, Brisson; but it seems to me that Brisson speaks of numerous black spots on the wings, which I have not seen either in *C. livia* or *C. turricola*.

From what has been told me by a personage of the highest rank, a game-keeper in Sicily killed there a *Porphyrio* much resembling *P. hyacinthinus* (*P. veterum*, Bp.), but having a deep green back. This I should suppose to have been *P. chloronotus*, Brehm, jun. (*P. hyacinthinus*, Rüpp., *P. ægyptiacus*, Heugl.), which, according to Bonaparte, is found in Algeria.

A word in conclusion on *Passer italiæ* (*P. cisalpina*). On my way to Italy by the Corniche road in 1838, I first noticed this race or species at Savona. Returning in 1866 by the same route, I first encountered the typical *P. domesticus* at Mentone. In 1840 I collected *P. italiæ* at Turin, in September, it is true. These types were but slightly characterized, the top of the head being variegated with red and greyish.

Such is the sum of the notes which I took during my last journey to Italy, in January 1866. I revisited these fine museums, enriched and augmented; but, alas! how many of the

savans who had greeted me in 1838 and 1840 had been snatched away by death! I no longer met Prince Charles Bonaparte and Riccioli of Rome, Géné of Turin, Philippi di Filippi and the Abbé Bernardo Marietti of Milan, General Albert de la Marmora and the Marquis Carlo Durazzo of Genoa, Risso and Verany of Nice, the Abbé Francesco Baldaconi of Sienna, Dr. Carlo Passerini of Florence, Carlo Porro of Lombardy—this last murdered by Croats in 1848 on their flight from Milan, whence he had been brought as an hostage. May their memory always remain blest to me! It is consoling always to be able to assert that the Italian ornithologists who have followed their footsteps are equally filled with the love of science, which is always held in honour in the New Italy—*una e libera*, where I found, as of old, an hospitality and a cordiality worthy of imitation among other nations.

Liège, 25th April, 1870.

XXXIII.—*Remarks on some disputed species of New-Zealand Birds.* By WALTER BULLER, F.L.S., F.G.S., C.M.Z.S.

‘THE IBIS’ for October last contains an article from the pen of Dr. Otto Finsch, on some species of New-Zealand birds previously described by me as new. The writer, after noticing the receipt of a large collection of skins from Dr. Haast, states that he found among them some of the species characterized as new in my ‘Essay on the Ornithology of New Zealand,’ and in a paper which I afterwards contributed to ‘The Ibis’ for January 1869, and adds that “some of those so-called new species are by no means new to science.”

While I do not undervalue the opinions of so expert an ornithologist as Dr. Finsch, and do not fail to appreciate the more extended means of comparison and research which he possesses over the local naturalist in New Zealand, who, far removed from the great libraries and museums of the scientific world, is cast very much on his own resources, yet I feel that I enjoy at least one important advantage over the closet-naturalist, however extensive his general knowledge, in being able to study the objects themselves in the field of nature.

In common with all true lovers of science, I have but one object in view, namely, the advancement of truth; and I am most willing to see those of my "new species" that can be proved to have no real existence expunged from the list of New-Zealand birds. I am unable, however, to accept some of Dr. Finsch's conclusions, resting, as it appears to me, on insufficient data—the more so as he seems, in one or two instances, to have been unconsciously misled by specimens, forwarded to him by his correspondent in New Zealand, wrongly named, but purporting to be typical examples of my new species.

In further elucidation of these disputed species, I have to offer the following remarks:—

PLATYCERCUS ALPINUS.

Dr. Finsch disallows this species, on the ground that the differences which characterize it are "by no means specific, and only indicate the young bird." Now here at once is an illustration of the mistakes into which the best closet-naturalists are apt to fall by a mere comparison of dried specimens. I have obtained the young of *P. auriceps* from the nest and caged it to maturity; and from the first the frontal band and thigh-spots were crimson. On the other hand, I have met with a caged specimen, coloured as in my *P. alpinus*, which, to my certain knowledge, was more than five years old, and in which there was no indication whatever of a change from orange to crimson. Besides the peculiarities in the coloration of this bird, there is (as I have before remarked) a very manifest difference in size, *P. alpinus* being as much smaller than *P. auriceps* as the latter is less than *P. novæ-zelandiæ*.

Apart also from this, Dr. Haast, to whom I am indebted for my first examples, writes thus on the habits of this bird:—"I send specimens of both (*i. e.* the crimson-fronted and the orange-fronted). These two kinds occur always together; but in some localities the first, and in others the second, is predominant. You find both kinds in all seasons; therefore we cannot suppose that the orange-fronted is the young of the other. Besides, it is not so bold a bird as the crimson-fronted;" and, in a subsequent letter, he states that my *P. alpinus* is not only "much

smaller than the two other species, but also differs from them in its habits." It is clear, therefore, that the differences (whatever their value may be) are not attributable to immaturity. Admitting that they are constant, and are sufficiently obvious to mark a distinct race, my position is established. Whether the bird is to be regarded as a distinct "species," or as a well-defined "variety," in which the distinguishing characters are constant, need not be here discussed; for this at once raises the *quæstio vexata*, "What is a species?" I feel bound, however, on what I take to be the true definition of a species, to maintain the validity of my *Platycercus alpinus*. Since my notice of this bird in 'The Ibis,' I have discovered that it is not restricted to the South Island exclusively, the caged specimen referred to above having been obtained in the Province of Wellington. Nevertheless it is extremely rare in the North Island. Nor does it appear to be confined to the mountain-country, and the specific term *alpinus* is perhaps scarcely appropriate. It was suggested to me by the following note from Dr. Haast, who has the credit of the discovery:—"We shot this pretty bird in the Oxford Ranges, and among the forest vegetation in our Alps, at an altitude of from 2000 to 2500 feet."

Dr. Haast's remarks on the local distribution of *P. alpinus* and *P. auriceps* apply also to the two species that are common in the North Island. *P. auriceps* largely predominates in the northern, and *P. novæ-zelandiæ* in the southern portions of the island, although both are to be met with in almost every district.

NESTOR OCCIDENTALIS.

Dr. Finsch remarks of two specimens forwarded to him by Dr. Haast, and identified as *N. meridionalis*, that they "most probably" represent my new species, on the ground that they were obtained from the "same locality," namely the west coast of the South Island.

The only two specimens of this *Nestor* that I know of are in my own collection. They were obtained by Dr. Hector in a remote part of the country, to which probably no other explorer has ever penetrated. And I would here remark that the region

indicated by "the west coast" is an extensive one, stretching as it does from Cape Farewell in the north to the furthest limits of the Otago Province. I submit, therefore, that Dr. Finsch's opinion, resting on such data, and regarding a bird which he has never had an opportunity of examining, is far from being conclusive. The following notes from so careful an observer as Dr. Hector, are much more to the purpose, because they contain the evidence of a field-naturalist on a very material point:—"The range of this species is very limited. It frequents the precipitous wooded cliffs in the neighbourhood of George Sound. I never met with it in the forests of the lowlands. It is more active in its habits, and more Hawk-like in its flight, than the common *Nestor*. It often sweeps suddenly to the ground; and the cry differs from that of the common Kaka in being more shrill and wild."

GERYGONE ASSIMILIS.

Dr. Finsch condemns this species, because a specimen received from Dr. Haast, and labelled "*Gerygone assimilis*," agrees in every respect with *G. flaviventris*. I am not aware that this species occurs in the South Island, and I demur to being held in any way accountable for wrongly-named specimens which I have never had an opportunity of identifying. Dr. Haast's specimen has apparently been labelled *G. assimilis* in error, which would account for Dr. Finsch being "at once convinced that the skin of this species is not distinguishable from that of the true *G. flaviventris*," especially as he adds that the specimen agrees in every respect with the description and figure given by Mr. G. R. Gray.

TURNAGRA HECTORI.

Dr. Finsch is no doubt right as to the identification, by the editor of 'The Ibis,' of my bird with *Otagon tanagra*, Schlegel, a description of which appeared in the 'Nederlandsch Tijdschrift voor de Dierkunde' (iii. p. 190) in 1865, without any habitat being assigned to it; and it was noticed in the 'Record of Zoological Literature' (ii. p. 112) for that year; but I believe I am right in stating that no description had appeared in English before the publication of my article in 'The Ibis.'

The genus *Turnagra* was established by Lesson in 1837. Our oldest known species, the *Tanagra capensis* of Sparrman (1786), and *Turdus crassirostris* of Gmelin (1788), was made by Mr. Gray in 1840 the type of his genus *Keropia* [lege *Ceropia*]. But in 1841 he referred the species to the genus *Turnagra*; and I have deemed it right to follow his determination. The names *T. macularia*, Quoy & Gaim., and *Otagon turdus*, Bonaparte, also refer to our well-known bird the Piopio of the South Island. Prof. Schlegel retains Bonaparte's genus *Otagon*, and adopts the rejected generic title of *Tanagra* specifically to distinguish the new form. Following our nomenclature, this will become *Turnagra tanagra*, which appears to me an objectionable association of names.

The merit, however, of being the first to notice the existence of this new species belongs to Prof. Schlegel, although he was apparently unaware that it came from New Zealand.

ANAS GIBBERIFRONS, S. Müller.

I am indebted to Dr. Finsch for setting me right with respect to this species. It is remarkable, however, that a bird known to inhabit Australia, and having so wide a geographical distribution, should have been entirely omitted from Mr. Gould's recent 'Handbook to the Birds of Australia.' Although my *A. gracilis* now sinks into a synonym, I feel quite as much satisfaction in having added *A. gibberifrons* to the list of New-Zealand species.

While on the subject of Ducks, I would add that a further addition has been made to our avifauna in an example sent to me by Captain Hutton, which I have identified as the *Nyroca australis* of Gould. Several specimens were obtained by Captain Hutton from Lake Whangape, in the Province of Auckland [*vide supra*, 395].

PODICEPS CRISTATUS (Linn.).

The specimen from which I took the original description of my *P. hectori* did not present any white markings on the wings or scapulars; but this was probably due to the condition of the dried skin; for in all the specimens I have since examined, this character is sufficiently conspicuous. My supposed species,

like Mr. Gould's *P. australis*, must therefore be held synonymous with the well-known *P. cristatus*.

But it is still probable that we have in this country a distinct race of the Crested Grebe, distinguishable by the underparts being of a uniform rufous-grey, instead of silvery-white, stained with chestnut on the sides. I treated this bird as *P. hectori* in another state of plumage, although expressing doubt on the subject. I cannot discover that *P. cristatus* in any condition, sexual or seasonal, presents this peculiarity, which is constant in all Dr. Hector's specimens from certain localities.

Dr. Hector considers the dark-breasted Grebe (of which there are specimens in the Colonial Museum at Wellington) a totally distinct bird, and states that he found it inhabiting the lakes of the interior, while the white-breasted one was confined exclusively to the lakes bordering on the coast. If this should hereafter prove to be a distinct species, I must claim from naturalists its recognition as *P. hectori*.

Wanganui, New Zealand,
March 16, 1870.

XXXIV. Note on the "*Tchagra*" of *Le Vaillant*.

By E. L. LAYARD, F.Z.S. &c.

IN my 'Birds of South Africa' (p. 160) I have, following Swainson's lead, identified this bird as *Lanius erythropterus*, Linn. (*Telophonus erythropterus*, Swains.); but I have always been puzzled that no specimen with a *black crown* ever came to hand from any of my correspondents; neither could I personally find one so distinguished, either at Nelspoort or Zootendals Vley, the only two places where it had occurred to me. Not without serious misgivings, therefore, I came to the conclusion that I had never received (or procured) a full adult male in breeding-plumage, and I let "*Le Tchagra*" stand as a synonym of *T. erythropterus*.

Some few weeks ago I received a specimen from Mr. Ortlepp, procured at Port Elizabeth July 29th, which again revived all my suspicions. Surely this bird answered closely to Swainson's *Telophonus longirostris* (Anim. Menag. p. 282)! What

did *Le Vaillant* mean by "la partie supérieure de la tête est d'un noir brun légèrement teint d'olivâtre"? Surely not the "*black*" of Swainson's description? I wrote to my most likely correspondents, and could not find that any of them had ever seen a *black-crowned bird*.

Just at this juncture a new correspondent, Mr. H. C. Harford, of Natal, forwarded thence a small parcel of birds, and to my delight a *Telophonus* appeared among them. Half a glance sufficed to show it differed from our common Cape bird; and hastily turning it over, I found a "*black crown*"! To my mind the mystery is now solved, but I wish to call the attention of naturalists at home, who have series of specimens from Spain, North Africa, Senegal and elsewhere, to this subject, to confirm or controvert my impression.

The "*Tchagra*" of *Le Vaillant* (pl. 70) is not *Lanius erythropterus*, Linn.; Shaw, Gen. Zool. vii. p. 301; Cuvier, i. p. 271; *Le Pie-grièche rousse à tête noir du Senegal*, Pl. Enl. 479, f. 1; nor (teste Cuvier) *L. rutilus*, Lath. var. γ ; nor *Telophonus senegalensis* (L.), Hartl., Orn. Westafr. p. 105.

Nor is it Swainson's *T. erythropterus*, B. W. Africa, i. p. 235; but it is Swainson's *T. longirostris* (ut suprà).

It differs from the true *L. erythropterus* in having a more elongated, less deep and broad, and more curved bill, in wanting the black head; the crown is never more than a dark brown. The rufous of the wing-feathers is not so rich and clear, the white stripe over the eye is not so large or distinct; the grey of the underparts* is not so clear nor so distinct from the rufous-grey of the upperparts. The scapulars and tertials are not so black; and the middle tail-feathers do not show the narrow brown bars with such distinctness.

The bill, however, is the most prominent difference; and *Le Vaillant*'s plate gives a very fair impression of the shape of that of the true "*Tchagra*."

Dr. Hartlaub (*op. cit.* p. 106) says that Prof. Schlegel does not consider *T. erythropterus* specifically distinct from the birds in-

* Swainson describes these as "entirely white, but tinged with grey on the sides, and with cream colour on the belly, thighs, and under tail-coverts." No one could call them in either of my birds "white."

habiting South Africa and Spain—the “*Tchagra*” of Le Vaillant,—but that they should be considered local races; and he goes on to say that a specimen from Senegal in the Bremen collection which he was inclined to consider the female of *T. erythropterus*, differs in its smaller dimensions, lighter colour and thinner bill, and in the brown colour of the forehead.

What is a species, and what a local race I leave to Prof. Schlegel to determine; but can the Bremen bird be, as it seems to me, a true “*Tchagra*” from Senegal? If so, the two races or species are mingled together there, and the assertion that it is a local race cannot be maintained.

The Spanish bird, from what I can gather from Dr. Bree (B. Eur. i. pp. 171, 172) appears to be the true *T. erythropterus* (L.), not the “*Tchagra*” of Le Vaillant.

Le Vaillant’s “*Tchagra*” is common enough in the places described by him, and is the only one to be met with in the parts of the country visited by him. I hope to be able to ascertain how far it extends to the eastward before it gives place to the black-headed species; but I have already received it from a more easterly point than LeVaillant ever reached. I have sent my Natal correspondent the true “*Tchagra*,” and have requested him to look closely into the subject, to see if he can find it there. I find *T. senegalus*, with a reference to Le Vaillant’s plate, included in the list of birds procured by Andersson in Damaraland (Contr. Orn. 1852, p. 145), but I do not recollect seeing it among such of his specimens as passed through my hands.

XXXV.—*List of Birds obtained in the Irawadi valley around Ava, Thayet Myo, and Bassein.* By W. T. BLANFORD, C.M.Z.S.

THE following is a list of birds obtained by me in the years 1861 and 1862, partly during a visit to Mandélé, the modern capital of Ava, but chiefly either around Thayet Myo, in Upper Pegu, or in the Bassein district, in Lower Pegu. I was principally induced to collect by the accident of meeting Dr. Jerdon at Thayet Myo; but at that time, before his invaluable ‘Birds of India’ was published, the determination of species

in the field was almost impossible, and even in the large towns of India, except Calcutta, no collections and but few books were available for comparison*. A portion of my collection was given to the Asiatic Society's (now the Indian) Museum in Calcutta; the remainder I took to England in 1862, and the species were named for me by the kindness of Mr. P. L. Selater, who wished me to supply such notes as I could add on the habits and distribution of the birds, for publication in 'The Ibis.' Various occupations prevented my doing this at the moment; my stay in Europe was extremely short; and on my return to India the list was mislaid or overlooked, until I had, to a great extent, forgotten the matter.

Recently I came upon the list; and so little has been added since 1862 to our knowledge of the ornithology of Pegu and Independent Burma, that I am induced to believe that the few notes I can give will be of as much interest now as formerly. I add the names of the species presented to the Indian Museum from Mr. Blyth's lists (Jour. As. Soc. Beng. 1863, xxxii. p. 74). The majority of the specimens have long since been dispersed; there are some, however, in the Museum at Calcutta, to which I have access.

It should not be forgotten that the birds here enumerated belong to two very distinct subfaunas. The animals of Lower Pegu are mostly identical with species of the South-east Himalayas, Arakan, and Tenasserim, and form a link in the great Malay fauna. The forms inhabiting the dry country of Upper Burma and, generally speaking, of the Irawadi valley above Prome, are in many instances more closely allied to Indian (non-Malay) forms, and have not unfrequently African rather than Malay affinities. Examples are to be found in such species as *Oxylophus jacobinus*, *Francolinus phayrii*, *Chatorhea gularis*, and *Pericrocotus albifrons*, none of which appear to occur or to be represented by allied forms in Lower Pegu, Arakan, and Tenasserim.

* Even at the present day, except in Madras and, I believe, in Agra, there is nothing worthy of the name of a local ornithological collection. In Bombay any thing like a museum is disgracefully "conspicuous by its absence."

1. *Hierax eutolmus*, Hodgk.—One specimen shot on the hills east of Ava; others were obtained on the hills of the Bassein district of Pegu. They were always seen perched conspicuously on leafless branches; and the Burmese told me they fed on beetles.

2. *Palæornis*, sp.—?—This is the bird to which Dr. Jerdon refers under the head of *P. javanicus* (B. Ind. i. pp. 263, 264); and, like him, I also saw large flocks near Thayet Myo, both when in his company and subsequently. As late as November at all events I saw no specimen with a red breast, although I shot several and saw others caged.

3. *Picus blanfordi*, Blyth, J.A.S.B. xxxii. p. 75.—This is little more than a variety of *P. mahrattensis*, with the white spots rather better developed. Common at Thayet Myo. I also obtained specimens near Ava. It is probably peculiar to the drier parts of Burmah, and I did not meet with it in Lower Pegu.

4. *Hemicercus canente* (Less.)—Bassein, not common.

5. *Chrysocolaptes sultaneus* (Hodgk.).—Pegu: Bassein district.

6. *Hemilophus feddeni* (Blyth, J. A. S. B. 1863, xxxii. p. 75).—Bassein and Thayet Myo; not very common. Named after Mr. F. Fedden, of the Geological Survey, who obtained the first specimen I saw. The species is distinguished from *H. hodysoni* of Malabar by the much larger quantity of white on the inner webs of the quills, which in *H. feddeni* extends for half their length on all the quills. The dimensions of the type specimen in the Calcutta Museum are:—wing 3·75, tail 6·5, bill nearly 2 inches. I cannot find a specimen of *H. hodysoni* for comparison.

7. *Hemilophus pulverulentus* (Temm.).—I met with this large Woodpecker only once, on the hills (known as the Shan Hills) east of the Irawadi, near Mandélé and Ava. I came upon a small flock of five or six, which were excessively noisy and rather wary, keeping to high trees. By good fortune I procured one specimen, now in the Calcutta Museum. The wing measures 9·5, tail 6·5 in.

8. *Gecinus striolatus* (Blyth).—Pegu: Irawadi delta.

9. *Gecinus viridanus* (Blyth).—Pegu: also found in Upper Burma.

10. *Gecinus chlorolophus* (Vieill.).—Hills east of Ava.

11. *Micropterus phaeiceps*, Blyth.—Bassein.

12. *Chrysnotus intermedius* (Blyth).—Pegu. By far the commonest species of Woodpecker in the Bassein district. Found also at Thayet Myo.

13. *Megalama hodgsoni*, Bonap.—Bassein: Rangoon, common.

14. *Xantholama indicu* (Lath.).—Ava. This bird is rare in Burma compared with its abundance almost throughout the plains of India.

15. *Polyphasias tenuirostris* (J. E. Gray).—Pegu: Ava.

16. *Oxylophus jacobinus* (Bodd.).—Very abundant around Thayet Myo, as mentioned by Dr. Jerdon (B. Ind. i. p. 340). As it is a common African species, it is probably peculiar, on the eastern side of the Bay of Bengal, to the dry region of Upper Burma.

17. *Zanclostomus tristis* (Less.).—Bassein.

18. *Harpactes hodgsoni*, Gould.—Bassein, Pegu. Not seen in the dry region of Upper Burma. It keeps to rather thick woods.

19. *Merops viridis*, L.—Pegu; very common.

20. *Merops quinticolor*, Vieill.—Pegu and Ava; less common.

In March I saw large numbers of a *Merops* (probably *M. philippensis*) breeding near the banks of the Bassein river, one of the mouths of the Irawadi. The holes were not made in a bank, but on flat sandy ground; and had I not seen the birds going in and out, I should have taken them for rat-holes.

21. *Nyctiornis athertoni*, Jerd. & Selb.—Bassein.

22. *Coracias affinis*, M^cClell.—Pegu and Ava.

23. *Eurystomus orientalis* (L.).—Bassein, in Pegu.

24. *Halcyon amauropterus*, Pears.—Irawadi delta.

25. *Halcyon leucocephalus* (Gmel.).—Thayet Myo.

26. *Halcyon smyrnensis* (L.).—Pegu, inland; not observed in the delta.

27. *Halcyon atricapillus* (Lath.).—Irawadi delta; very common, but only seen as far as salt water extends up the rivers.

28. *Alcedo meninting*, Horsf.—Irawadi delta.

29. *Alcedo bengalensis*, Gmel.—Pegu, inland.

This species, *Halcyon leucocephalus* and *H. smyrnensis* are

apparently replaced in the Irawadi delta, where the water is salt, by *A. meningting*, *H. amauropterus*, and *H. atricapillus*.

30. *Ceryle rudis* (L.).—More common about Ava than in Pegu

31. *Buceros albirostris*, Shaw.—Pegu generally; but not seen in the Irawadi delta. I also obtained it near Ava.

32. *Buceros cavatus*, L.—I obtained a head at Ava, which had been brought from the neighbourhood.

33. *Buceros bicornis*, L.—Common in the Arakan hills—on the west side, at least,—and in the Irawadi delta. I did not meet with it in Upper Pegu; and it is so remarkable and conspicuous a bird that I could not easily have overlooked it. The sound of its wings, when flying, is audible at a great distance.

34. *Upupa longirostris*, Jerdon.—Pegu generally.

35. *Petrocincla saxatilis* (L.).—Upper Burma, on the banks of the Irawadi near Ava.

I am not aware that this bird has ever been recorded from the plains of India, although it was obtained by Dr. Stoliczka in Western Thibet. *P. castaneicollis*, Less., is identical, in Dr. Stoliczka's opinion (J. A. S. B. 1868, xxxvii. p. 34).

36. *Petrocincla cyanea* (L.).—Upper Burma.

37. *Copsychus macrurus* (Gmel.).—Hills, Bassein district, Pegu; not common.

38. *Pratincola indica*, Blyth.—Pegu.

39. *Pratincola leucura*, Blyth.—Banks of Irawadi, near Thayet Myo, and throughout Upper Burma. Common, and a constant resident. Another instance of a bird from the dry region of India recurring in Upper Burma.

40. *Oreicola jerdoni*, Blyth, Ibis, 1867, p. 14 (*Rhodophila melanoleuca*, Jerd.).—Obtained only once, in long elephant-grass, in the northern portion of the Bassein district, Pegu.

41. *Henicurus immaculatus*, Hodgs.—Arakan Hills.

42. *Dendrophila frontalis* (Horsf.).—Arakan Hills, Bassein; common.

43. *Chatorhea gularis*, Blyth.—Upper Burma. Found commonly about Thayet Myo, and still more abundantly in the dry country above the British frontier.

44. *Chatorhea earlii*, Blyth.—Banks of the Irawadi, in high elephant-grass at Thayet Myo, and also near Ava.

45. *Megalurus palustris*, Horsf.—Ava. The high elephant-grass, with the last species. A solitary bird. It has a far finer song than its allies of the *Timaliinae*; and I have noticed its peculiarity, mentioned by Mr. Blyth and Dr. Jerdon, of rising singing into the air, and hovering. In this respect, in its habitat, and in many of its habits, it singularly resembles its diminutive relative *Cisticola schænicola*.

46. *Garrulax belangeri* (Less.).—Bassein, Pegu.

47. *Garrulax moniliger* (Hodgs.).—Upper Burma, near Ava.

48. *Mixornis rubricapilla* (Tickell).—Arakan Hills, near Bassein.

49. *Oriolus melanocephalus*, L.—Ava, Thayet Myo, and Bassein.

50. *Oriolus tenuirostris*, Blyth.—Thayet Myo.

51. *Pycnonotus nigropileus*, Blyth.—Common everywhere from Ava downwards. Specimens from Lower Pegu are very probably referable to *P. hæmorrhous*.

52. *Pycnonotus finlaysoni*, Strickland.—Bassein.

53. *Pycnonotus blanfordi*, Jerdon, Ibis, 1862, pp. 19, 20; *P. familiaris*, Blyth.—Thayet Myo.

54. *Brachypodius melanocephalus* (Gmel.).—Bassein.

55. *Phyllornis aurifrons*, Temm.—Thayet Myo, and above Ava.

56. *Iora typhia* (L.).—Common throughout the Irawadi valley. I am unable to agree with Mr. A. Hume, who has lately expressed an opinion (J. A. S. B. 1870, xxxix. p. 117) that this form is identical with *I. zeylanica*. The females and males in non-breeding-plumage are undistinguishable; but in breeding-plumage the males differ widely, as I have satisfied myself within the last few days by dissecting a breeding-male of *I. typhia* which had the usual green back, head, and tail. Dr. Jerdon also mentions a difference in the colour of the iris.

57. *Nectarinia asiatica* (Lath.).—Thayet Myo: Yenankhyoung.

58. *Arachnothera affinis*, Blyth?—Arakan Hills, near Bassein.

59. *Dicaeum cruentatum* (L.).—Thayet Myo: Upper Burma.

60. *Dicaeum chrysorrhæum*, Temm.—Shot on the banks of the Irawadi, twenty miles above Ava.

61. *Dicaeum minimum* (Tickell).—As the last.
62. *Graucalus macæi*, Less.—Bassein.
63. *Volvocivora melanoptera*, Blyth.—Bassein district.
64. *Pericrocotus rutilus*, Gould.—Bassein district.
65. *Pericrocotus roseus* (Vieill.).—Bassein.
66. *Pericrocotus peregrinus* (L.).—Thayet Myo.
67. *Pericrocotus albifrons*, Jerdon, Ibis, 1862, p. 20.—Thayet Myo, and in Upper Burma at least as far as Pagan, where I obtained it. It is doubtless confined to the dry region of Burma, where it represents *P. erythropygus*, similarly confined to the drier parts of India.
68. *Edolius paradiseus* (L.).—Lower Pegu.
69. *Dicrurus longicaudatus*, A. Hay.—Bassein district.
70. *Dicrurus intermedius*, Blyth.—Arakan Hills, near Bassein.
71. *Tchitrea affinis* (A. Hay).—Arakan Hills, near Bassein.
72. *Myiagra azurea* (Bodd.).—Bassein.
73. *Leucocerca aureola* (Vieill.), var.—Thayet Myo. Mr. Blyth says this differs from Indian specimens in the white of the forehead and supercilia, as well as on the tail-feathers, being less in extent (J. A. S. B. 1863, xxxii. p. 79). Dr. Jerdon (B. Ind. i. p. 453) refers to it as a new species.
74. *Cryptolopha cinereocapilla* (Vieill.).—Pegu; Arakan Hills.
75. *Eumyias melanops* (Vigors).—Bassein.
76. *Erythrosterina leucura* (Gould).—Bassein. This does not appear to extend to the west of Bengal, and is the Indo-Chinese species. *E. parva* (Bechstein), the Indo-African and European form, appears to be the only one met with in India generally west of the Bengal Presidency.
77. *Cyornis rubeculoides* (Vigors).—Ava. I also obtained specimens in Lower Pegu, near Bassein.
78. *Tephrodornis pondiceriana* (Gmel.).—Thayet Myo.
79. *Lanius cristatus*, L.—Bassein.
80. *Lanius hypoleucus*, Blyth.—Thayet Myo and Ava, in the cold season only.
81. *Dendrocitta rufa* (Scop.).—Common throughout the Irawadi valley, in Pegu.
82. *Crypsirhina cucullata*, Jerd., Ibis, 1862, p. 20.—Thayet Myo, and the dry country above the British frontier; not seen in Lower Pegu.

83. *Crypsirhina varians* (Lath.).—Prome, Bassein.

84. *Urocissa magnirostris*, Blyth.—Thayet Myo. About August these birds were in small flocks composed of families and their nearly full-grown young. I saw a blue Magpie, probably of this species, close to Ava.

85. *Cissa sinensis* (Bodd.).—Near Prome.

86. *Gracula intermedia*, A. Hay.—Forest jungle, Bassein district.

87. *Temenuchus burmannicus* (Jerd. Ibis, 1862, p. 21).—Thayet Myo and Ava; more common above the British frontier than below it.

88. *Sturnopastor superciliaris*, Blyth.—Thayet Myo.

89. *Munia rubronigra* (Hodgson).—Thayet Myo.

90. *Ploceus bengalensis*, Blyth.—Thayet Myo, Ava.

91. *Ploceus manyar* (Horsf.).—Thayet Myo, in high elephant-grass on an island in the Irawadi, breeding in July and August.

92. *Ploceus baya*, Blyth.—Bassein.

93. *Passer flaveolus*, Blyth.—Thayet Myo; abundant in the bushes around the station. Common also further up the Irawadi.

94. *Euspiza aureola* (Pall.).—Ava.

95. *Euspiza rutila* (Pall.).—Arakan hills, near Bassein, Pegu. Dr. Jerdon (B. Ind. ii. p. 380) by mistake says that I obtained this bird in Upper Burma.

96. *Corydalla richardi* (Vieill.).—Bassein.

97. *Corydalla rufula* (Vieill.).—Thayet Myo; Bassein.

98. *Anthus agilis*, Sykes.—Thayet Myo, Bassein.

99. *Mirafra affinis*, Jerd.—Thayet Myo; common.

100. *Carpophaga sylvatica*, Tickell.—Arakan Hills, Prome, Bassein; common.

101. *Treron phœnicoptera* (Lath.).—Ava.

102. *Treron viridifrons*, Blyth.—Bassein: Thayet Myo?

103. *Treron phayrii* (Blyth).—Irawadi delta, near Bassein. This species and its allies of the group *Osmotreron* are wanting in the drier parts of India and Burma.

104. *Turtur tigrinus* (Temm.).—Thayet Myo.

105. *Francolinns phayrii*, Blyth.—Ava? Thayet Myo; Prome; not observed in Lower Pegu.

106. *Coturnix communis*, Bonn.—Pegu.
 107. *Turnix maculosa*, Temm. ; *T. blanfordi*, Blyth, J. A.S.B. 1863, p. 80.—Thayet Myo.
 108. *Turnix ocellata* (Scop.).—Puppa Hill, near Pagan.
 109. *Charadrius longipes*, Temm.—Bassein district.
 110. *Chaetusia cinerea* (Blyth).—Bassein.
 111. *Hoplopterus ventralis*, Cuv.—Banks of rivers ; Pegu and Ava.
 112. *Sarciophorus bilobus* (Gmel.).—Thayet Myo.
 113. *Edicnemus crepitans*, Temm.—Yenan-khyoung. I found a considerable flock in September. This is probably the most eastern locality known for the bird, and is an additional instance of the occurrence of western species in Upper Burma.

XXXVI.—*On Additional Collections of Birds from the Fantee Country.* By R. B. SHARPE, F.L.S., Libr. Z.S., &c.

(Plate XIV.)

SINCE the appearance of my last paper on the Ornithology of Fantee (*suprà*, pp. 52–59), I have been so fortunate as to receive for description no less than five collections from this locality ; and it will readily be believed that an examination of so large a series of birds has led to the discovery of many new and interesting facts.

The first collection was received from Mr. Higgins, whose endeavours to procure me specimens from Western Africa I have the greatest pleasure in acknowledging. No novelties were contained in it ; but a few birds in interesting stages of plumage were received.

The second collection was placed at my service by Professor Schlegel, who, with the utmost kindness, recently showed me the treasures of the great Museum at Leyden, and, perceiving the interest which I felt in West-African birds, most liberally allowed me to bring to London, for description, a small remnant of one of the collections sent from the Gold Coast, by the Dutch Governor Nagtglas. As nearly all the species it contained proved to be new, the value of Professor Schlegel's act cannot be too highly appreciated.

The third collection is the first consignment, I trust, of a series, an account of which I hope, from time to time, to lay before the readers of 'The Ibis.' Through a chain of fortuitous circumstances, I made the acquaintance of His Excellency Governor Ussher, now in Fantee; and part of the materials of the present paper is due to that gentleman's goodness.

I also take this opportunity of returning my best thanks to Staff-Surgeon B. Hinde, who had also begun to collect for me, and had already obtained some birds, when ill-health unfortunately compelled him to return home. He then most kindly took under his charge the collection forwarded by His Excellency, and brought it to England in beautiful condition. The specimens of which it consists are all preserved in the best possible manner, and alone are sufficient to show how much an energetic naturalist may do, even in a district so well explored as the Fantee country is supposed to be.

For the fourth collection I am indebted to another kind friend, Mr. Andrew Swanzy, F.L.S., who submitted to my inspection an excellent series of Fantee birds which he had received from time to time. Full notices of the species in Mr. Swanzy's possession will be found in the body of the paper; but I must express my obligations to him for the gift of many valuable specimens, thus making my series of Fantee birds more complete. Lastly, and after I had finished with the other four collections, a second consignment of bird-skins from Governor Ussher has reached me, just in time to record in their proper places the species it contains. During his recent visit to the river Volta he was so good as to take a collector; and I feel sure that all ornithologists will be thankful to him for this proof of zeal in the good cause, as through his endeavours we have now some information about the ornithology of a hitherto unexplored locality. In his last letter he writes:—"I observed, on the Volta, Pelicans and a very small Flamingo (rose-colour and black), a few Curlews, Sandpipers, and so forth, and a very few of a common kind of Teal, grey and chestnut, which I have shot at most places on the coast; but, as a rule, water-birds were very wild and very scarce. The banks of the Volta are open, and not sedgy, and afford but little cover for them; but for the war, however, I

could have got double the number. Hippopotami and Crocodiles were common."

Before, however, entering upon the particulars which all these collections furnish, I wish to make a few notes on the birds recorded by me in my former papers, especially as some corrections are necessary.

Ibis, 1869, p. 187.—*Trichophorus gularis* (no. 5) is the true *Criniger gularis* (Sw.), as I have ascertained by comparison with the type. The specific term, however, being preoccupied by Horsfield, the species will stand as *C. tephrogenys*, Jard. & Selby, if that be really the same, which appears doubtful.

—, p. 191.—*Sycobius cristatus* (no. 31). In Mr. Ussher's collection is a specimen of a *Sycobius* which Dr. Finsch identifies as the young of this species; and I am inclined to agree with him. The following is a description:—

Above deep glossy-black, with a slight tinge of brown on the lores and base of the mandible; underneath dusky black, tinged with brown on the throat and under tail-coverts; bill dark brownish horn-colour, paler and inclining to yellow on the lower mandible; legs pale brown. Total length 5 inches, bill .7, wing 2.7, tail 1.6, tarsus .65.

—, p. 191.—*Sycobius scutatus* (no. 32). In the last collection received from Mr. Higgins was a young specimen, apparently a nestling, of this rather rare species. I therefore give a description of the bird, as it is in most curious plumage and contrasts markedly with the adult:—♂ jun. niger: fronte, gutture, pectore superiore, crissoque *scarlatinis*: rostro brunneo.

—, p. 191.—*Sycobius nuchalis*, Elliott, is certainly the same as *Euplectes rufivelatus*, Fraser (P.Z.S. 1842, p. 142); but that this is the same as *Sycobius malimbis* (Temm.) as stated by Dr. Hartlaub (Orn. Westafr. p. 132), I am not quite convinced.

—, p. 193.—*Barbatula duchaillui* (no. 44) is referred to the genus *Xylobucco* by Messrs. Marshall (Monogr. *Capiton*. pt. 2). I can hardly agree in this view; for the proportions of the inner hind toe are decidedly different in the

present bird, when compared with *X. scolopacea*, the type of the genus.

Ibis, 1869, p. 383.—*Nectarinia angolensis* (no. 67). By some unaccountable mistake the name of this species was inserted instead of that of *N. adalberti*; and I hasten to correct the oversight. Further investigation may prove the former to be an inhabitant of Fantee; but as yet the species has not been shewn to occur there.

—, p. 384.—*Lamprocolius purpureiceps* (no. 71). M. Jules Verreaux, who has seen my specimen, tells me that it is *L. cupreicauda* (Temm.).

—, p. 384.—*Nigrita emiliæ* (no. 75). I am not so sanguine as I was concerning the distinctness of this new species from *N. cinereicapilla*. It appears that all *Nigrita* take a considerable time to get their fully adult plumage; thus *N. luteifrons*, from Gaboon, is grey underneath in the young, black in the adult; and if this is the case in one species, the absence of a white rump in another ought not to be of much consequence. Moreover, in Mr. Ussher's last collection is a *Nigrita* from the Volta, which may be described as follows:—*Unicolor ardesiaca, uropygio concolori, cauda nitenti-nigra: subalaribus interioribus dorso proximis albidis*. Mr. Ussher considers this to be a new species; but I should like to see some additional specimens before deciding on the question, as it may be the very young of *N. cinereicapilla*, and my *N. emiliæ* the same species in an intermediate stage of plumage. On the other hand, however, I have seen in my own and in Mr. Swanzy's collection at least twenty specimens of *N. emiliæ* from Fantee, and not one of them had the white rump of *N. cinereicapilla*.

—, p. 385.—*Musophaga gigantea* (no. 80). Mr. Ussher has sent a fine specimen, shot at Accra, Feb. 1870.

—, p. 386.—*Trachyphonus purpuratus* (no. 86). My specimens were not, as I supposed, the young of this species, but turn out to be the nearly allied, but distinct *T. goffini* (cf. Marshall, Monogr. Capiton. pt. 4).

Ibis, 1870, p. 52.—*Criniger pallescens* (no. 98). From a comparison of the type of Swainson's *Phyllastrephus scandens*,

I find that the two species are identical, and the bird must stand as *Criniger scandens* (Swains.).

Ibis, 1870, p. 52.—*Nectarinia fantensis* (no. 103) is *N. phæothorax* of Dr. Hartlaub, as already pointed out by that gentleman (*suprà*, p. 443).

—, p. 53.—*Cassinia finschi* (no. 104). The Leyden Museum also has a specimen of this bird from Fantee.

—, p. 55.—*Laniarius chloris* (no. 107) is the type of the new genus *Nicator*, Hartl. & Finsch (Vög. Ost.-Afr. p. 359), and should stand as *N. chloris* (Val.).

As in my former papers on this subject, a dagger (†) is affixed to all species believed to have been met with in Fantee for the first time; and the same works are referred to now as then.

127. *ANDROPADUS GRACILIROSTRIS*, Strick.; Hartl., Journ. f. Orn. 1855, p. 360.

One specimen received from Mr. Higgins. Also procured by Heer Pel on the Rio Boutry.

128. *IXUS INORNATUS*, Fras.; Hartl., Orn. Westafr. p. 88.

One specimen in the collection received from Mr. Higgins.

† 129. *ALETHE MACULICAUDA*, Hartl., J. f. O. 1861, p. 162.

One specimen in the first collection sent by Mr. Ussher.

My new genus, *Oxylabes*, lately described, from Madagascar (*cf.* P. Z. S. 1870, p. 386), is closely allied, and indeed hardly separable. The species now sent comes very near to *A. castanea*, Cassin, but is distinguishable at once by the white tips to the tail-feathers, as well as by other small differences.

† 130. *ILLADOPSIS GULARIS*, sp. n.

I. affinis *I. fulvescenti*, sed paullo major, pectore toto sordide rufescente.

Above rufous-brown, much brighter on the lower part of the back and rump; quills dull brown, edged with rufous; cheeks greyish-white, with brown markings; throat white; rest of the under surface of the body pale reddish, much deeper on the flanks and sides of the body; upper mandible dark horn-brown. lower mandible yellowish; feet dull brown. Total length 6 inches, wing 2·7, tail 2·1, tarsus ·9.

The two specimens from which the above descriptions have been taken are in the Leyden Museum, obtained by Nagtglas at Elmina, in July 1861. In general appearance the species resembles *I. fulvescens* (Cass.) from Gaboon, but is slightly larger and is altogether rufescent underneath, without the white on the abdomen, so that the white throat stands out more conspicuously, hence the name I have selected for the species.

131. *CISTICOLA SCHÆNICOLA*, Bp. *C. cursitans*, Hartl., Orn. Westafr. p. 264. *Drymæca uropygialis*, Fras. ; Hartl., *op. cit.* p. 56.

Mr. Ussher has sent several specimens of this bird from the Volta, and also from Cape Coast. From Mr. Fraser's description I had no difficulty in making it out to be his *D. uropygialis*, but could not reconcile it with his figure (Zool. Typ. pl. 42, fig. 2)—the subject of which I cannot identify ; but it most certainly does not agree with his description in the least. I have, however, set all doubts on the subject at rest by a comparison of my specimens with the type in the British Museum.

†132. *DRYMÆCA ERYTHROPS*, Hartl., Orn. Westafr. p. 58.

Two specimens from the Volta.

133. *DRYMÆCA MELANORHYNCHA*, Jard., Contr. Orn. 1852, p. 60 ; Hartl., Orn. Westafr. p. 56.

Mr. Ussher has sent some specimens from the Volta ; and there is one at Leyden, sent by Nagtglas. I have compared these with a bird in the British Museum, marked as above by Sir William Jardine, and find them to be identical.

134. *DRYMÆCA ERYTHROPTERA*, Jard., Contr. Orn. 1849, p. 15, pl. 15 ; Hartl., Orn. Westafr. p. 55.

Mr. Ussher has sent from the Volta two specimens of this Warbler, or at least what I take to be Sir William Jardine's bird (*l. c.*). They differ from his figure in the bill, which is long and entirely black. Moreover they differ considerably *inter se* ; for one has more rufous about it than the other, especially on the nape of the neck and *back*, whereas the other is grey all down the back, becoming rufous only towards the rump. Yet I think they belong to one and the same species.

†135. *DRYMÆCA NEVIA*, Hartl., Orn. Westafr. p. 56.

One specimen from the Volta.

†136. *DRYMÆCA SWANZII*, sp. n.

D. affinis D. laterali, sed supra cinerascens, vertice subrufo et ala brevior distinguenda.

Fore part of the head dull rufous-brown; upper portion of the body ashy-grey; wing-coverts greyish-brown; edge of the wing pale yellow; quills dull brown, the secondaries paler and indistinctly undulated in certain lights, the outer web broadly washed with bright rufous, the inner web pale rufous at the base; tail ashy-grey, the middle feathers indistinctly undulated in certain lights, and all the feathers rather broadly barred across the tip; under surface of the body fulvous-white; sides of the body grey, but more distinctly fulvous on the lower flanks; thighs pale rufous; bill black, the lower mandible yellow at the base; legs pale rufous. Total length 4·3 in., bill ·55, wing 2·2, tail 1·7, tarsus ·7.

This species I am unable to reconcile with any description. The British Museum also has a specimen, but with no name attached to it, and I have no alternative but to describe it as new. It is closely allied to *D. lateralis*, Fraser (P. Z. S. 1843, p. 16), but differs in being slightly smaller, in the dull-rufous forehead and the shorter wing, in addition to the grey colouring of the upper surface.

†147. *DRYMÆCA BRACHYPTERA*, sp. n. (Pl. XIV. fig. 1.)

D. supra saturate brunnea unicolor, uropygii paullo rufescente; supercilio albicanti; genis fulvescentibus rufo tinctis; tectricibus alarum grisescenti-brunneis, majoribus rufo marginatis; flexura alæ albida; remigibus brunneis, extus late rufescente marginatis; cauda brunnea, rufo marginata, rectricibus mediis concoloribus, reliquis ante apicem pallide fulvescentem nigro transnotatis; gula alba; corpore subtus late fulvo, tibiis rufescentibus: rostro corneo, mandibula flava; pedibus flavicantibus.

Above very dark brown, paler on the rump, which inclines to rufous; feathers between the bill and the eye, extending backwards over the latter, white slightly tinged with fulvous; wing-coverts greyish-brown, the greater coverts edged with rufous, edge of the wing fulvous; quills blackish-brown, paler at the base of the inner web, the outer web broadly edged with rufous; tail brown, tinged with rufous, the tips of all the feathers being

clear rufous-brown, the rest of the feather deep blackish-brown, more pronounced just before the tip, but the deep black of the whole feather does not give the bar across the feather so characteristic of other species; the two middle feathers uniform dark brown, margined with rufous; throat white; rest of the under surface of the body deep fulvous, especially on the flanks and thighs; under wing- and tail-coverts pale fulvous; bill horn-brown, lower mandible yellowish; feet yellow. Total length 34 in., bill from front .4, wing 1.6, tail 1.3, tarsus .65.

This is another species which I have failed to identify, although from its minute size I think I should have discovered its name, had it been anywhere described. As far as I can see, it is nearest to *D. superciliosa*, Swains.; but it is very much smaller and darker, and has not the character of the distinct black caudal bar possessed by that species.

Both birds here described as new are from the river Volta, sent by Mr. Ussher.

†138. CAMAROPTERA ICTERICA (Strickl.). *Chloropeta ictERICA*, Hartl., Orn. Westafr. p. 60.

One specimen sent by Mr. Ussher from Cape Coast.

139. CAMAROPTERA BREVICAUDATA (Rüpp.); Finsch, Journ. f. Orn. 1869, p. 335.

From the Volta. Dr. Finsch (*l.c.*) has already recorded it from the Gold Coast.

140. HYLIA PRASINA, Cass. Proc. Ac. N. S. Philad. 1855, p. 325. "*Stiphrornis superciliaris*, Temm.," Hartl., Journ. f. Orn. 1855, p. 355. *Chloropeta superciliaris*, *Id.*, Orn. Westafr. p. 60.

A single specimen of this interesting bird in Mr. Ussher's collection. Dr. Finsch was the first to draw my attention to the identity of the species mentioned above.

†141. NECTARINIA CYANOLÆMA, Jard.; Hartl., Orn. Westafr. p. 51.

N. sericeo-fuliginosa, alis et cauda saturatioribus; sincipite et jugulo metallice purpureis: subtus fuliginosa, pallidior; fasciculis axillaribus limoneis; rostro et pedibus nigris.

Above dull smoky-brown, with a blackish gloss; quills

blackish-brown, the secondaries rather paler; tail blackish-brown, paler underneath; fore part of the head and entire throat purplish-blue; cheeks and ear-coverts dark brown; under surface of the body paler brown; axillary tufts lemon-yellow; bill and feet black. Total length 5·8 in., bill ·95, wing 2·7, tail 1·9, tarsus ·6.

I have thought it worth while to describe this species, as it is extremely rare in collections, and specimens differ in coloration. That described is in the Leyden Museum, and was obtained in Fantee by Nagtglas.

†142. *NECTARINIA JOHANNÆ*, Verr.; Hartl., Orn. Westafr. p. 45.

A male sent by Mr. Ussher in his first collection. He informs me that it is very rare in Fantee.

†143. *NECTARINIA VERTICALIS* (Reich.); Hartl., Orn. Westafr. p. 50.

In the collection received from Mr. Higgins.

†144. *NECTARINIA OBSCURA*, Jard.; Hartl., Orn. Westafr. p. 50.

In the collection received from Mr. Higgins.

†145. *NECTARINIA SUBCOLLARI* (Reich.); Hartl., Orn. Westafr. p. 52.

This species would appear to be tolerably common in Fantee, as every collection lately received contains examples of it. One specimen was sent by Mr. Ussher from the Volta.

†146. *NECTARINIA FULIGINOSA* (Shaw); Hartl., Orn. Westafr. p. 43.

Of this beautiful Sunbird, Mr. Ussher has sent several specimens from the Volta, Lagos, and Cape Coast; so that it is not rare in Fantee, although not recorded thence before. Mr. Swanzy also has specimens.

†147. *NECTARINIA REICHENBACHI*, Hartl., Orn. Westafr. p. 50.

Two specimens sent from the Volta by Mr. Ussher. M. Verreaux, who possesses the type, has seen them and pronounced them to be correctly determined.

148. *PSALIDOPROCNE HOLOMELÆNA* (Sundev.); Sharpe, P.Z.S. 1870, p. 288.

One specimen in Mr. Ussher's last collection, shot by him at Fort Victoria, Cape Coast.

†149. *COTYLE CINCTA* (Bodd.); Sharpe, P. Z. S. 1870, p. 297.

One specimen from the Volta. The only *Cotyle* known to occur so far north in Western Africa is *C. eques*, Hartl., described from Prince's Island. When I wrote my paper on the African Swallows (*l. c.*) I had never seen the species; but I separated it from *C. cincta* on account of the white which it was stated to possess on the outer tail-feather. If, as I have good reason to believe, the Fantee bird is the same as the species from Prince's Island, I would not now separate it from *C. cincta*, from which it differs only in its darker coloration and smaller length of wing, characters which a larger series would be sure to show are not specific.

150. *HIRUNDO PUELLA*, Temm.; Sharpe, P.Z.S. 1870, p. 319.

One specimen.

†151. *BUTALIS COMITATUS*, Cass.; Hartl., Orn. Westafr. p. 265.

Above dark grey, the feathers of the head long and very broad, forming a sort of crest; quills and tail-feathers deep blackish-brown; lores whitish; feathers between the bill and the eye black; cheeks pale grey; throat and abdomen white, tinged slightly on the latter with fulvous; upper part of the breast pale rusty-grey, inclining to darker grey on the sides of the body; bill black; feet dark brown. Total length 5 in., of wing 2·85, tail 2·1, tarsus ·96.

The above is a description of a specimen in the Leyden Museum.

This species must be very closely allied to *Muscicapa modesta*, Hartl. (*op. cit.* p. 96), but seems nevertheless to be distinct, as far as can be gathered from descriptions, which are never any great help in determining these Grey Flycatchers. The principal difference seems to be in the much shorter length of the tarsus in the Fantee bird, and in the total absence of

white edgings to the primaries. I have three specimens of *B. comitatus* before me, belonging to the Leyden Museum. One of them appears to be a younger bird, and is much darker in colour, and has more grey on the breast.

†152. *BUTALIS EPULATUS*, Cass. ; Hartl., Orn. Westafr. p. 96.
One specimen in Mr. Swanzy's collection.

†153. *PLATYSTIRA SENEGALENSIS* (L.) ; Hartl., Orn. Westafr. p. 94.

One specimen sent by Mr. Ussher from the Volta.

†154. *PLATYSTIRA LEUCOPYGIALIS*, Fras. ; Hartl., Orn. Westafr. p. 95.

Two females and one male in the collection received from Mr. Higgins ; in Mr. Ussher's first collection a single male, beautifully preserved, and exhibiting fully the peculiar form of this most aberrant *Platystira*. His specimen bears the following remark :—"Small spectacled Flycatcher. Wattles bright scarlet." No one, to look at these wattles in the preserved specimen, would guess their original colour in the living bird, as they fade to a dull grey.

†155. *TERPSIPHONE TRICOLOR* (Fras.) ; Hartl., Orn. Westafr. p. 90.

One specimen obtained by Nagtglas is in the Leyden Museum. *Muscipeta flaviventris*, Verreaux (J. f. O. 1855, p. 103), is synonymous.

†156. *TERPSIPHONE ATROCHALYBEA* (Thoms.) ; Hartl., Orn. Westafr. p. 92.

One specimen in the collection received from Mr. Higgins.

†157. *PARUS FUNEREUS* (Verr.) ; Hartl., Orn. Westafr. p. 70.

One specimen in the Leyden Museum, obtained at Elmina by Governor Nagtglas in Sept. 1861.

†158. *PARUS LEUCOPTERUS*, Sw. ; Hartl., Orn. Westafr. p. 70.

Two specimens from the Volta, sent by Mr. Ussher. Fantee is a new locality for this Titmouse, which is widely distributed over Africa. I have it in my collection from the Gambia, Abyssinia, Natal, and Damara Land.

†159. *DICRURUS ATRIPENNIS*, Sw.; Hartl., Orn. Westafr. p. 101.

For the identification of this species I am indebted to Lord Walden, our first authority on this difficult family of birds. It would appear to be very rare in Fantee, only one specimen having been received by me, while *D. coracinus* seems to be numerous all over the Fantee country.

160. *MACRONYX CROCEUS* (Vieill.); Hartl., Orn. Westafr. p. 73.

In his last collection, Mr. Ussher has sent some very nice specimens of this Pipit from Cape Coast and the river Volta. It was sent by Riis from Aguapim.

†161. *ANTHUS GOULDI*, Fras.; Hartl., Orn. Westafr. p. 73.

One specimen in Mr. Swanzy's collection.

This Pipit, now recorded from Fantee for the first time, appears to be the West-African representative of the European *A. campestris*, from which it principally differs in its smaller size and darker coloration, especially on the head, which is of an uniform dull brown, while in *A. campestris* it is striped. Dr. Hartlaub (*l. c.*) describes the tail as "nigricanti-fusca, rectrice extima pallide ferruginca." This description suits very well a specimen in my collection from the Gambia; but in another specimen from the same locality the outer web of the last tail-feather is whitish upon the base for the greater part of its length; and in the bird just received from Fantee the greater part of the outer feather is white.

162. *HYPHANTORNIS PERSONATUS* (Vieill.); Hartl., Orn. Westafr. p. 123.

Mr. Ussher has sent several specimens from the Volta. Fraser also obtained it at Cape Coast.

163. *SPERMESTES BICOLOR* (Fras.). *Amadina bicolor*, Hartl., Orn. Westafr. p. 148.

A single specimen in the collection received from Mr. Higgins. More recently Mr. Ussher has sent numerous examples both from the Volta and from Cape Coast.

164. ESTRELLA MELPODA (Vieill.) ; Hartl., Orn. Westafr. p. 141.

One specimen in Mr. Swanzy's collection.

†165. PYTELIA SCHLEGELI, sp. n. (Plate XIV. figs. 2, 3.)

♂. *P. supra late olivaceo-viridis, uropygio saturate aurantiaco : facie pulcherrime rosea : gutture et pectore superiore aurantiaco-brunneis, roseo tinctis : colli lateribus dorso concoloribus : remigibus brunneis, secundariis dorsi colore late lavatis : cauda nigricante, olivaceo lavata : corpore subtus nigricante, passim maculis parvis albis rotundatis punctato : abdomine imo tibiis et tectricibus subcaudalibus olivascanti-viridibus : rostro flavo, ad basin maxillæ brunneo : pedibus flavis.*

♀. *Supra olivaceo-viridis, uropygio latiore : facie fulva : subtus olivaceo-cinerascens.*

Male. Above olive-green, golden-brown on the rump and upper tail-coverts ; sides of the face and chin beautiful rosy-red ; throat and upper part of the breast orange-brown, tinged with rosy ; sides of the neck of the same colour as the back ; quills brown, edged externally with olive-green like the back, especially the secondaries, which are almost entirely of this colour ; tail blackish, washed above with olive-green ; under surface of the body black, studded all over with little round spots of white ; lower abdomen, thighs, and under tail-coverts olive-green ; bill yellow, brown at the base of the upper mandible ; feet yellowish. Total length 4·7 in., wing 2, tail 1·15, tarsus ·6.

Female. Very dissimilar ; olive-green above, becoming brighter on the rump ; face fulvous ; throat and the rest of the under surface dull ashy, tinged with olive ; bill yellow, brown at the base of both mandibles. Total length 4·7 in., wing 2, tail 1·1, tarsus ·6.

A pair of this beautiful Finch are in the Leyden Museum, from Fantee, sent thence by Governor Nagtglas. I name the species after Prof. Schlegel, who, by his unwearied endeavours, has created in the minds of the Dutch officials in Africa an interest in ornithology, which has led to the discovery of facts most important to this science.

166. CRITHAGRA CHRYSOPYGA, Swains. ; Hartl., Orn. Westafr. p. 151 ; *C. chrysopogon*, Jard., Contr. Orn. 1849, p. 9 (*errore*).

From the Volta. Obtained in Fantee by Dr. Gordon, as mentioned by Sir W. Jardine (*l. c.*).

167. *PASSER SIMPLEX* (Sw.) ; Jard., Contr. Orn. 1849, p. 10 ; Hartl., Orn. Westafr. p. 150.

One specimen in Mr. Swanzy's collection.

†168. *ORIOLOUS AURATUS*, Vieill. ; Sharpe, Ibis, 1870, p. 216.
A specimen in Mr. Swanzy's collection, received many years ago from Fantee.

†169. *LAMPROCOLIUS NITENS* (L.) ; Hartl., Orn. Westafr. p. 118.

From the Volta. Mr. Ussher adds a note, "eyes scarlet."

170. *LAMPROCOLIUS AURATUS* (Gm.) ; Hartl., Orn. Westafr. p. 117.

Mr. Ussher has sent a beautiful specimen of this Glossy Thrush with the accompanying note:—"Shot by me at Accra, Feb. 1870. Eyes bright yellow, with black pupil."

171. *CORVUS SCAPULATUS*, Daud. ; Finsch & Hartl., Vög. Ost-Afr. p. 374.

One specimen in Mr. Swanzy's collection.

†172. *CHÆTURA USSHERI*, sp. n.

C. affinis C. cassini, sed diversa colore fuliginoso, cauda multo longiore, torque uropygiali albo conspicue latiore, et præcipue corpore subtus fuliginoso, abdomine imo tantum albo, et gutture albo plumis omnibus fuliginoso marginatis distinguenda.

General colour above smoky-brown, with a slight greenish gloss in some lights ; lower part of the back and rump pure white ; upper tail-coverts smoky-brown ; quills glossy black, pale brown on the inner web, the secondaries conspicuously margined with white ; tail glossy black, with a greenish gloss on the upper surface, the extremities of the feathers narrowly edged with white ; throat and upper part of the breast dull white, each feather margined with smoky-brown ; entire breast glossy smoky-brown, with indistinct mottlings down the centre ; lower part of the abdomen pure white ; under wing- and tail-coverts deep black, the edge of the wing smoky-brown, edged narrowly with white ; bill and feet black. Total length 5·2 in., wing 5·6, tail 1·5.

There can be no doubt that this Swift is entirely new ; for I have compared it with the types of *C. sabinii* and *C. cassini* in the British Museum. It is obviously distinct from the former, and from the latter it may be distinguished by the browner upper surface and the longer tail. But the more striking differences are the colour of the throat, which has not shaft-stripes, all the feathers being margined with brown, and the extent of white on the breast, this being confined to a narrow bar across the lower part of the abdomen.

The type-specimen was shot by Mr. Ussher himself at Fort Victoria, Cape-Coast Castle.

173. *CYPSELUS AFFINIS*, Gray ; Jard., Contr. Orn. 1849, p. 5 ; Sclater, P. Z. S. 1865, p. 603.

A specimen is in Mr. Swanzy's collection. According to Dr. Gordon's note as given by Sir W. Jardine (*l. c.*), this species is common in Fantee.

174. *EURYSTOMUS GULARIS* (Vieill.) ; Hartl., J. f. O. 1855, p. 360 ; *Id.*, Orn. Westafr. p. 29.

Two specimens in Mr. Ussher's first collection.

†175. *HALCYON BADIA*, Verr. ; Sharpe, Monogr. *Alcedin.* pt. 3.

Mr. Ussher sent one specimen of this lovely Kingfisher ; and he informs me that it is very rare in Fantee, this being the first one he ever saw.

†176. *HALCYON CYANOLEUCA* (Vieill.) ; Sharpe, Monogr. *Alcedin.* pt. 5.

A single specimen in Mr. Higgins's collection.

177. *HALCYON MALIMBICA* (Shaw) ; Sharpe, Monogr. *Alcedin.* pt. 7.

Mr. Ussher sent one specimen ; and Mr. Swanzy has two in his collection.

†178. *HALCYON SENEGALENSIS* (L.) ; Sharpe, Monogr. *Alcedin.* pt. 7.

Several specimens sent by Mr. Ussher from the Volta.

179. *CORYTHORNIS CYANOSTIGMA* (Rüpp.) ; Sharpe, Monogr. *Alcedin.* pt. 6.

One specimen from the Volta.

180. *CERYLE MAXIMA* (Pall.); Sharpe, Monogr. *Alcedin.* pt. 6.
One specimen, from the Volta.

181. *TOCKUS PULCHRIROSTRIS* (Schl.). *Buceros pulchrirostris*,
Schl., Nederl. Tijdschr. Dierk. i. p. 74, pl. v.

Two specimens, from the Volta. First discovered by Nagtglas.

182. *TOCKUS HARTLAUBI*, Gould, P. Z. S., 1860, p. 380.
Buceros nagtglasi, Schl. Nederl. Tijdschr. Dierk. i. (1863) p. 57.

Dr. Finsch drew my attention to the probable identity of
Prof. Schlegel's *Buceros nagtglasi* with the *Tockus hartlaubi* of
Mr. Gould, as had already been suggested by Mr. Selater (Ibis,
1863, p. 359). I believe that this view is correct.

†183. *SCHIZORHIS AFRICANA* (Lath.) ; Hartl., Orn. Westafr.
p. 160.

One specimen, sent by Mr. Ussher from the Volta. Never
before obtained, I believe, so far south.

†184. *BARBATULA CHRYSOCOMA*, Temm.; Hartl., Orn. Westafr.
p. 173.

One specimen in Mr. Ussher's last collection, from the river
Volta.

185. *BARBATULA ATROFLAVA* (Blumenb.) ; Hartl., Orn.
Westafr. p. 172.

One specimen sent by Mr. Ussher. As it was obtained by
Riis in Aguapim, it cannot be said to be new to Fantee.

†186. *COCCYSTES GLANDARIUS* (L.) ; Hartl., Orn. Westafr.
p. 188.

This species has been recorded from Senegambia, there being
specimens in the Paris Museum from this locality (*teste Hart-*
laub l. c.). I have examples of both old and young in my col-
lection from Damara Land, obtained by Andersson ; but it has
never before been met with in Fantee. In Mr. Ussher's collec-
tion is a young specimen with the primaries rufous. He in-
forms me that the bird is rare, the present example being obtained
by Dr. Hinde on Connor's Hill, Cape Coast, in December 1869.

†187. *CUCULUS RUBICULUS*, Swains. ; Hartl., Orn. Westafr.
p. 190.

Two specimens were in the collection received from Mr. Higgins. Dr. Hartlaub (*l. c.*) identifies a bird from Natal with this species; and Mr. Layard (B. S. Afr. p. 248) follows him. But a comparison of a Natal example in my collection with the Fantee specimens just received induces me to believe that the two species are distinct; for the southern bird is paler in colour and has a longer wing, while the rufous of the breast extends to the chin. It is of course possible that a large series from both localities would show these differences to be worth nothing; but from the evidence in my own collection I regard the two species as distinct.

188. *DENDROPICUS PYRRHOGASTER* (Malh.); Hartl., Journ. f. Orn. 1855, p. 351; *Id.*, Orn. Westafr. p. 180.

One specimen in the collection received from Mr. Higgins; it has already been obtained in Fantee by Heer Pel.

189. *PHÆOCEPHALUS GULIELMI* (Jard.); Finsch, Papag. ii. p. 480. *Psittacus gulielmi*, Hartl., Orn. Westafr. p. 167.

A young specimen. Dr. Finsch (*l. c.*) describes birds from the Gold Coast in the Leyden Museum, from which locality he says the species is often brought alive.

†190. *PERISTERA AFRA* (L.); Hartl., Orn. Westafr. p. 197.

Mr. Ussher has sent specimens of both old and young from the Volta.

†191. *TURTUR SEMITORQUATUS*, Rüpp.; Hartl., Orn. Westafr. p. 196.

From the Volta.

192. *FALCO CUVIERI*, Smith, Qu. Journ. S. Afr. i. (1830) p. 392. *Falco boschi*, Schl., Ned. Tijdschr. i. (1863) p. 123.

Mr. Ussher obtained one specimen, on the river Volta.

†193. *TINNUNCULUS ALAUDARIUS*, G. R. Gray; Hartl., Orn. Westafr. p. 9.

One specimen in Mr. Ussher's collection. He writes that it was shot on Connor's Hill, Cape Coast, by Dr. Hinde, December 1869.

194. *PERNIS APIVORUS* (L.); Hartl., Journ. f. Orn. 1855, p. 360; *Id.*, Orn. Westafr. p. 10.

A beautiful specimen was sent by Mr. Ussher. It had been already obtained in Fantee by Heer Pel.

195. *SYRNIUM NUCHALE*, sp. n.

Qu. *S. woodfordi*, Hartl., Orn. Westafr. p. 21 (*nec* A. Smith)?
S. affine S. woodfordi, sed multo saturatius, collo postico fasciis
latis albis notato; pectore saturate brunneo, late albo trans-
fasciato.

This bird, which Mr. Gurney agrees with me in considering to be undescribed, seems to be the West-African representative of *Syrnium woodfordi*; and it will be interesting to find out whether that species occurs in West Africa at all. This would appear to be the case, if Dr. Hartlaub's description (Orn. Westafr. p. 21) be really taken from a West-African specimen; for it agrees with specimens from South Africa in the Norwich Museum. The principal points of distinction between this new species and the true *S. woodfordi* are its much darker colouring, the almost entire absence of white on the scapulars, and the very distinct white bars on the hinder portion of the neck.

†196. *GLAREOLA CINEREA*, Fras.; Hartl., Orn. Westafr. p. 211.

Two specimens of this rare Pratincole are in Mr. Ussher's last collection from the Volta.

197. *ÆGIALITIS MARGINATUS* (Vicill.); Hartl., Orn. Westafr. p. 216.

Two specimens in Mr. Ussher's last collection from the Volta. Weiss has procured it also on the Gold Coast (*teste* Hartlaub); and as he collected in Fantee, the species is probably not new to the locality.

198. *BUTORIDES ATRICAPILLA* (Afzel.); Hartl., J. f. O. 1855, p. 361; *Id.*, Orn. Westafr. p. 223.

One specimen, from the Volta.

199. *ARDEA SCHISTACEA*, Licht.; Hartl., J. f. O. 1855, p. 361.
 One specimen, from the Volta.

†200. *ORTYGOMETRA ANGOLENSIS*, Hartl., Ibis, 1862, p. 340.
 For a specimen of this bird I am indebted to the kindness of

Dr. Hinde. I find it to be identical with a specimen in Mr. Monteiro's collection from Angola.

201. *HYDRORNIA PORPHYRIO* "(Temm.)", Hartl., Journ. f. Orn. 1855, p. 357; *Id.*, Orn. Westafr. p. 243.

In Mr. Swanzy's collection is a specimen of this curious Gallinule, which was first discovered by Pel at Elmina.

202. *PODICA SENEGALENSIS* (Vieill.); Hartl., Orn. Westafr. p. 249.

A specimen of this bird is in Mr. Swanzy's collection. Pel also obtained it in Ashantee.

203. *PHALACROCORAX AFRICANUS* (Gm.); Hartl., Orn. Westafr. p. 260.

One specimen sent by Mr. Ussher from the Volta.

†204. *HYDROCHELIDON FISSIPES* (L.). *H. nigra*, Hartl., Orn. Westafr. p. 256.

One specimen in Mr. Swanzy's collection.

XXXVII.—*Fourth Appendix to a List of Birds observed in Malta and Gozo.* By CHARLES A. WRIGHT, C.M.Z.S.

268. *STERNA CASPIA*. (Caspian Tern.)

On the 21st of May 1869, I visited Fort-Manoel Island; as soon as I arrived I saw a large Tern flying over the bridge. It was fearless, and repeatedly approached quite close to the soldiers on guard, who threw pieces of bread to it, upon which it immediately pounced and swallowed. The men told me that it had been there for several hours, flying up and down the creek, every now and then dropping into the water after small fish which appeared on the surface. I longed to make a prize of it; for I believed it to be *Sterna caspia*, though I had never seen this beautiful species on the wing before. After waiting more than half an hour it came within range, and I shot it from my skiff, when it proved to be what I had expected. It was a magnificent bird in full summer plumage; and I afterwards ascertained that it was a female, with two eggs in the ovary in an advanced stage of development. This species has not yet been included among

the birds of Malta; but I heard of another example shot about the same time.

The following are some notes relating to rare and occasional visitors :—

Neophron percnopterus (Ibis, 1864, p. 44). Another example of this very rare visitor was captured here in September 1869.

Circus gallicus (Ibis, 1864, p. 45). A female specimen was obtained on the 15th of November, 1866, and was preserved for the University Museum.

Milvus niger (Ibis, 1864, p. 46). On the 20th of September, 1864, I saw a specimen of this bird in the market. It is one of the rarest birds that visit this island in migration.

Circus cyaneus (Ibis, 1864, p. 46). I have before noticed the remarkable paucity of males of this species. On the 2nd of November, 1869, I obtained in the market an adult male alive. It may be at once distinguished from *C. pallidus* (the commonest species here) by its darker colouring and the absence of grey bars on the upper tail-coverts. The presence of fine striæ on the breast is not a good distinction, as I have seen them on examples of both species. The statement of Schembri, that the males and females were equally common, evidently arose from his mistaking for it *C. pallidus*—a species omitted in his Catalogue.

Strix otus (Ibis, 1864, pp. 49, 292). Within the last two or three years I have noticed several examples in the market, both at the vernal and autumnal periods of migration. There was a live bird on the 20th of October, 1869; and I have since seen two or three others. About the same time *S. brachyotus* was unusually plentiful.

Pyrrhula githaginea (Ibis, 1864, p. 51). Several young birds were taken during the summer of 1869; and in October I detected one among a number of Finches on the stalls in the market.

Passer petronia (Ibis, 1864, p. 53). In the autumn of 1869 there appears to have been an unusually numerous migration of this bird, a good many having been taken both by the net and the gun.

Emberiza cirrus (Ibis, 1864, pp. 54, 292). Since 1863 several

examples have been taken; and on the 10th and 11th of November, 1869, I picked up two males in the market.

Emberiza nivalis (Ibis, 1864, p. 55). Returning on the 13th of November, 1869, from an unsuccessful morning's excursion, having met with nothing but such common birds as pass the winter with us, my attention was attracted by a solitary bird, of somewhat strange appearance, pecking on the ground in a moist salt bit of waste land at the inner part of the Salini. It had doubtless chosen this spot as being most sheltered from the violence of a north-easterly gale which was then blowing. On shooting it I could hardly believe my eyes at the unexpected sight of a Snow-bunting lying before me—a traveller, possibly from the icy shores of Spitsbergen! It was a male in one of its most attractive states of plumage—pure white predominating.

Sitting down beside it and gazing upon it with mixed feelings of surprise, admiration and delight, not unmixed with regret that the pursuit of our favourite study should involve the occasional destruction of such pretty creatures, it was some time before I raised it from the ground; then, carefully smoothing its finely-varied plumage and plugging the shot-holes, which, fortunately, were not extensive or numerous, I walked on with a light step, excogitating on the strange chance that had brought me across this waif from the north.

As the Snow-Bunting seldom pushes its autumnal and winter migrations below the north of France and Germany, its presence in Malta is very extraordinary; and this island is the most southern point at which it has yet been observed*. It is not included by Dr. Salvadori in his catalogue of the birds of Sardinia; nor is any mention of it made by Benoit or Loche as a visitor in Sicily or North Africa.

Regulus cristatus (Ibis, 1864, p. 55). One of these birds flew into an open window of my house at Sliema on a cloudy day in November, 1869, and was caught. It appears to be a regular migrant in spring and autumn, and is most usually met with in the orange-groves for which the island is so famous.

Cypselus melba (Ibis, 1864, p. 58). A flock of about twenty

* [It has, however, been recorded from Tangier (Ibis, 1867, p. 427).—Ed.]

birds was seen sporting in the fortifications on the land-front of Valetta on the 11th of March, 1865.

Lanius minor (Ibis, 1864, p. 59). In September 1866, I obtained my first and only specimen of this bird. Schembri mentions it as a very rare visitor, having met with it (also in September) in 1839 and 1840. My bird had the flanks well marked with a lively pink colour, and was therefore most likely a male.

Motacilla rayi. The geographical distribution of the different species, races, or varieties of Yellow Wagtail is always a matter of interest. Hitherto I have only noticed here *M. flava*, L., and the forms *M. cinereicapilla* and *M. melanocephala*—the first and second being, perhaps, most commonly met with (Ibis, 1864, p. 63). I have now to include *M. rayi*, from an example taken in the spring of 1868 and preserved in the University Museum. Through the kindness of the Rector, I was enabled to take the specimen home for closer study and comparison with a series of the different European forms in my possession. The head and cheeks are greenish-yellow, brighter yellow on the forehead, with a superciliary streak of the same. The underparts are bright yellow, and the whole back is olivaceous-green. This Yellow Wagtail has before been observed as far south as Malta, Mr. Tristram having obtained it in Morocco and Algeria. The general result of his extended personal experience would seem to indicate that the different forms glide into one another—the dark shade of the head increasing in intensity as we go eastward.

Cyanecula suecica (Ibis, 1864, p. 67). On the 28th of March, 1869, a male of the white-spotted form of this bird (*C. leucocyanea*?) was shot in a field of *Hedysarum coronarium*. It has before been occasionally killed in Malta, but it is so extremely rare that this was the first specimen that ever came into my hands in the flesh. The blue of the breast was very brilliant, and the pectoral spot of a pure silvery-white. Several others were seen and shot about the same time.

Chætusia leucura (Ibis, 1865, p. 459). A second example of this very scarce European visitor was shot, on some marshy ground at the head of the Grand Harbour, on the 24th of October, 1869. It had no companions, and it was by mere chance

that its occurrence became known. The taxidermist I usually employ happened to be a relation of the man who shot it; and he, having seen the specimen obtained by me in 1864 and the figure of it in 'The Ibis' (1865, pl. x.), immediately recognized its value, and saved it from being cooked. When shown to me, it had already been set up; but the skin was quite fresh. Like the former specimen, it was a female: the tail was entirely white, without the terminal brown bar which is sometimes present in this species. The bird-stuffer assured me that the irides were *brown*, which agrees with the experience of Dr. Adams, who shot this bird in the Punjaub; the margins of the eyelids were *red*. There was nothing extraordinary in the weather at the time to account for its appearance.

Tringa temmincki (Ibis, 1864, p. 148). I shot another specimen of this Stint on the 14th of May, 1869, at the Salini, out of a flock of five. This makes the third or fourth time that I have observed it; but I have no doubt that it is commoner than it appears to be, and is often mistaken for its congener.

Phænicopterus roseus (Ibis, 1864, p. 149). Among the remarkable captures made in the winter of 1867-68, were two Flamingos, shot at the Salini, after having been seen at the Marsa. The weather had been very stormy for some days previously. This bird, like many others, is much more rarely seen now than formerly.

Larus minutus (Ibis, 1864, p. 152). This is a very uncertain visitor, and during the last four or five years I have not met with it more than two or three times.

Anas casarca (Ibis, 1864, p. 155). A second example was shot at the Marsa, in December 1864; and I saw a third in a collection of Maltese birds.

Mergus albellus (Ibis, 1864, pp. 156, 291). This rare visitor has appeared several times during the last few years. A fine adult male was obtained in the winter of 1868, and preserved for the University Museum; and at the same time one or two females were shot.

I find that an examination of Dr. Salvadori's interesting catalogue of the birds of Sardinia (*cf.* Ibis, 1865, p. 225), for a copy of which I am indebted to the author's kindness, confirms

to a great extent my own observations on the migration of birds in Malta. By a singular coincidence, the number of species therein included is the same as that at which my Malta list now stands; but it is, of course, made up of somewhat different elements. It is scarcely to be doubted, however, that most of those regular migrants which have occasionally been taken here, do likewise visit Sardinia more or less frequently, though they may not hitherto have been noticed there. The much greater size of that island does not give it so preponderating an advantage as would at first sight appear, over our little sea-girt rock; for while many rare and adventitious visitors may be easily overlooked in the wilds and forests of Sardinia, here, on the contrary, in this circumscribed spot they are brought, as it were, into a focus; and, as nearly everybody has a gun, and all kinds of birds, from an Eagle to a Nightingale, are sent to the market as "game," comparatively few, even of the rarest, escape notice. It is to be hoped that Dr. Salvadori's excellent catalogue will incite other close observers, like himself, to form similar catalogues for other parts of the Mediterranean. I may, however, remark that he gives, incidentally, a list of the rarities in the collection of Signor Negri, at Genoa, including a specimen of *Actiturus longicaudus* taken there in October 1859, making, with that recorded by me (*Ibis*, 1869, p. 247), the seventh* occurrence of this American species in Europe.

XXXVIII.—*Notes on some Old-World species of Passerine Birds.* H. B. TRISTRAM, M.A., LL.D., F.R.S., &c.

I HAVE lately received some very interesting series of Indian Passerine birds from my friend and zealous ornithological colleague, Mr. W. G. Brooks, C.E., which throw light on the geographical distribution of several species.

First I find that, as Mr. Blyth had previously noted (*Ibis*, 1867, p. 24), *Phyllopneuste rama* (Sykes) is apparently identical with *Sylvia caligata*, Licht., and *S. scita*, Eversm., a bird which evidently winters in India and breeds in Northern Asia; but Mr. Blyth at the same time suggested that possibly *Hypolais*

* [M. Gerbe (*Orn. Eur.* ii. p. 210) mentions an *eighth* killed in Picardy.—Ed.]

elaica might also be identical. On comparison, however, I find this to be very distinct. By some oversight the measurement of the length of the tarsus has been exaggerated in Temminck's description of *S. caligata*, a mistake exactly followed by all subsequent compilers of books on European Birds. I find my own Siberian specimen as well as those in the British Museum agree with my Indian series in their measurements.

On examining Mr. Gould's collection, which, as is his wont, he kindly and readily allowed me to study at leisure, I find that he has possessed for many years, under the name of *Sylvia scita*, Eversm., Mr. Hume's new species of *Calamodyta agricolensis* (*suprà*, p. 182). I hope Mr. Hume will forgive me for not adopting his new genus, however well marked may be the species which he and Mr. Brooks have discriminated.

Mr. Brooks has also sent what he considers the common Indian *Locustella*. The specimen proves the correctness of Mr. Jerdon's conjecture that it is distinct from the European species, although his provisional name (B. Ind. ii. p. 160), *L. temporalis*, must go, since it turns out to be, as Mr. Blyth suggested it possibly might (Ibis, 1867, p. 20), *L. hendersoni*, Cassin, = *L. macropus*, Swinhoe, and is identical with the Chinese bird.

Specimens, received from Siberia and the Amoor, of *Accentor montanellus*, Temm., confirm the belief expressed by Middendorff (Sib. Reise, ii. p. 172) that *A. temmincki*, Brandt, would prove identical with *A. montanellus*, Temm. My winter-shot specimen exactly corresponds with the coloration of Dr. Brandt's bird, having the supercilia and breast whitish instead of buff, while the breeding-plumage of another specimen is exactly that figured by Mr. Gould and described by Temminck. It is at least a consolation to perplexed lovers of the *Sylviidae* that they need not any longer be harassed by doubts as to which third species of *Accentor* is entitled to a place in the European list, as the same species ranges from east to west of Northern Asia.

Mr. Brooks has sent me several skins of *Sylvia* marked by him *S. affinis*. He states in his letter that he has never met with but one of the group in India, and doubts the existence of a second species, *S. curruca*, in India. His specimens are a trifle larger than our *S. curruca*, but do not reach the dimensions

given by Mr. Jerdon (B. Ind. ii. p. 209) for *S. affinis*. There is one constant distinction between them and our bird—the outer tail-feathers are nearly all pure white, and the others tipped with pure white. In European specimens the white is of much less extent, and is never pure, but rather greyish white. Palestine examples agree with British, not with Indian, in this respect.

In my notice of the occurrence of *Sylvia melanopogon*, Temm., in India (*suprà*, p. 301), *Amnicola melanopogon*, Gerb., is printed as a synonym. But M. Gerbe's generic name cannot be allowed to stand, as it has been appropriated for many years to a well-known genus of fluviatile mollusks. If the species be entitled to generic distinction, Mr. Gray's name of *Lusciniola* must be accepted, though I cannot with him include in the same group *L. lanceolata*, Temm., which seems to me an undoubted typical *Locustella*.

For a similar reason Mr. Hume's genus *Jerdonia* (*loc. cit.*) must be rejected, as it too has been already appropriated to a molluscan group.

I may take this opportunity of correcting a mistake in synonymy by Dr. von Heuglin in his very useful 'Ornithologie Nordost Afrikas.' He there gives (i. pp. 303, 304) the name of *Sylvia melanocephala minor* to the East-African and Syrian forms, which he makes equivalent to *Curruca momus*, H. and Ehr., = *C. luctuosa*, Brehm (Vogelf. p. 229), = *Melizophilus nigricapillus*, Cab. (Mus. Hein. i. p. 35). But he also identifies it with my *Sylvia bowmani* (Ibis, 1867, p. 85), from which it is very clearly distinct. Dr. von Heuglin must have overlooked my diagnosis, or he could not have thus united the form with the well-known bird described by Hemprich and Ehrenberg, which occurs through all Syria and Egypt, while *S. bowmani* is confined to the Dead-Sea basin, and is only known by two specimens.

There is a new *Saxicola* described in the same work (p. 350), *S. finschi*, which I am unable to discriminate from *S. libanotica*; the latter is not included by Dr. von Heuglin, though I have obtained it from Egypt. Of course without a type-specimen by me, it is impossible to dogmatize; and the imperfect condition in which Hemprich and Ehrenberg's work has been left renders the identification of many of their species almost hopeless.

I have been not a little surprised at the identification of *Ixus nigricans* of South Africa with *I. xanthopygius*, H. & Ehr., to which Mr. Sharpe has called attention in his recent review (*suprà*, p. 432). I possess a large series both of Palestine and Cape specimens, and two from the east coast of Africa: the most cursory glance is sufficient to decide the distinctness of the northern and southern birds. Equally erroneous, as Mr. Sharpe has observed (*suprà*, p. 430), are the identifications comprised under *Sylvia nana*, H. & Ehr. *S. nana* is not clearly described by Hemprich. But *S. delicatula*, Hartl., and *S. deserticola*, mihi, both of which I have before me, are widely different—the median rectrices of the former being bright chestnut, of the latter the whole of the rectrices of an uniform brown-black.

I trust I am not given to unnecessary “splitting” in ornithology; but there is yet another identification of Dr. von Heuglin’s to which I must demur, although it has been confirmed by Mr. Sharpe (*loc. cit.*), for which perhaps I am partly responsible, viz. *Aedon galactodes* with *A. familiaris*. Not only is it impossible to overlook the difference in size, even if we could get over the grey back and still darker head, while the head of *A. galactodes* is one-coloured with the back; but the white patch at the extremity of the tail-feathers is much narrower in *A. familiaris*, while the black bar behind the white is double the width of that of *A. galactodes*.

While upon North-African birds, were I a “splitter,” I should be strongly tempted to describe the *Cinclus aquaticus* of Mount Atlas as a distinct species. This bird is exceedingly rare. Loche only obtained two specimens, which are in the Museum of Algiers, and have not been compared with European specimens. I never saw the bird in life in Algeria; and the only other specimen I know of was shot by Mr. J. H. Gurney, Jun., in his recent expedition to North Africa, and by him most kindly presented to me.

In coloration it exactly coincides with the true *C. aquaticus*, but in size it is as follows:—whole length 5·75 in., wing 2·9, tail 1·9, bill from gape ·65.

The measurements of the British bird are:—whole length 7 inches, wing 3·25, tail 2·25, bill from gape ·75.

Should it be determined to be distinct, I propose for it the name of

CINCLUS MINOR.

I have long had in my possession, from Mysore, a giant Stonechat in summer plumage, very brightly coloured, which had often puzzled me. I lately received from my friend Mr. Brooks a specimen of the same bird in winter plumage, given him by Mr. Jerdon, who procured it in the Sutlej valley. I have had the pleasure of introducing Mr. Jerdon to his old friend, which he at once recognized; and it was evident the two specimens belonged to the same species, hitherto undescribed. I propose to name it

PRATINCOLA ROBUSTA, sp. n.

P. maxima, coloribus *P. pastori* simillima, sed intensioribus; pectore intense rufo, abdomine rufo nec albido; striga nuchali angusta.

Long. tot. 5·95, alæ 3, caudæ 2·45 poll.

It is thus very much larger than any known species of *Pratincola*. It may be further discriminated from *P. pastor* and *P. sibylla* by the intensity of its rufous breast extending down to the abdomen without any white; and also from these and from *P. rubicola* by the very narrow white spot on each side of the neck instead of the bold white patch, while in the breeding-plumage the black of the head and back is most intense. I am very fortunate to have the decided authority of Mr. Jerdon for describing this most interesting bird as new. Its size is the more remarkable when contrasted with the small *P. indica*.

May I lastly remark, to bring these desultory notes to a conclusion, that *Drymæca anchietæ*, Bocage (Jorn. Sc. Lisboa, 1868, p. 41), which has been identified by Dr. Hartlaub (Bericht u. s. w. 1869, p. 126) with *Chatops grayi*, Sharpe (P. Z. S. 1869, p. 163, pl. 14), is also identical with *Sphenæacus pycnopygius*, Sclater (Contrib. Ornith. 1852, p. 148, pl. 102), so that this rare bird has had the good fortune to be thrice described and twice figured*!

* [M. Jules Verreaux, who has lately examined the type of this species, now in the Strickland Collection at Cambridge, is of opinion that it cannot properly be included in any one of the genera to which it has been referred, and that probably a new genus should be established for its reception.—ED.]

XXXIX.—On a new *Muscicapine* Bird from Madagascar.

By R. B. SHARPE, F.L.S., Libr. Zool. Soc., &c.

(Plate XV.)

A SMALL collection of birds recently brought from Madagascar by Mr. A. Crossley contains a single specimen of what appears to be the type of an entirely new genus, belonging to the family *Muscicapidæ*, which I propose to call

PSEUDOBAS.

GEN. CHAR. :—

Rostrum dilatatum, apicem versus acuminatum, dextro recto apicem versus paullo decurvato, gonyde vix ascendente, setis rectis, elongatis, rostri longitudinem vix æquantibus, naribus parvis oblongis.

Alæ longæ, acuminatæ, remige primo brevissimo, secundo longiore, tertio sextum æquante paullo longiore, quartum vix æquante, quarto et quinto longissimis æqualibus.

Cauda longa, quadrata, rectricibus duodecim, apicem versus latis.

Pedes graciles, tarso scutellato, digitis parvis, exterioribus æquilongis, halluce paullo robustiore digitum medium subæquante.

PSEUDOBAS WARDI, sp. n.

P. supra virescenti-ater; tectricibus alarum nigris, albo terminatis; remigibus secundariis late albo marginatis; rectricibus basin versus externe albis: infra albus, pectore nigro hypochondriisque grisescens exceptis; rostro pedibusque nigris.

General colour above glossy black, having a slight shade of green in some lights: the outermost greater wing-coverts spotted at the apex with white, the innermost entirely white, and the secondaries broadly edged with white, forming a longitudinal white alar bar; tail square, black, white at the base of the outer webs; throat, sides of the neck, abdomen and under wing- and tail-coverts silky-white; upper part of the breast glossy black, verging into greyish-black on the flanks; bill and feet black. Total length 6 inches, bill .55, wing 2.5, tail 2.4, tarsus .55.

I name this species after Mr. C. Ward, of Halifax, under whose auspices Mr. Crossley's investigations have been carried on.

XL.—Third List of Birds collected, during the Survey of the Straits of Magellan, by Dr. Cunningham. By P. L. SCLATER, M.A., Ph.D., F.R.S., and OSBERT SALVIN, M.A., F.L.S., F.Z.S. With additional Note by THE EDITOR.

A THIRD collection of bird-skins formed by Dr. Cunningham, who has now finally returned from the surveying expedition of the Straits of Magellan, having been, like the two former*, placed in the Museum of the University of Cambridge, has been submitted to us for our determination by Professor Newton.

The following is a list of the thirty-three species it contains, with the localities and dates of their collection :—

1. *Mimus thenca* (Mol.) Coquimbo Aug. 5, 1868.
2. *Troglodytes magellanicus* (Gould) . . Sandy Point Jan. 1869.
3. *Hirundo meyeri*, Cab. Sandy Point Jan. 1869.
4. *Zonotrichia pileata* (Bodd.) Sandy Point Nov. 1868,
Mar. 1869.
5. *Diuca grisea*, Less. Ancud Nov. 1868.
6. *Chrysomitris barbata* (Mol.) Ancud, Sandy
Point Jan. Nov. 1869.
7. *Geositta cunicularia* (Vieill.) Coquimbo Aug. 5, 1868.
8. *Patagona gigas* (Vieill.) Compañía Aug. 31, 1868.
9. *Colaptes pitius* (Mol.) Ancud Nov. 17, 1868.
10. *Polyborus tharus* (Mol.) Island of Quehuy Nov. 21, 1869.
11. *Tinnunculus sparverius* (L.) Coquimbo July 31, 1868.
- †12. *Phalacrocorax carunculatus* (Gm.) Mayne Harbour,
Port Charruca April 2, 1869.
13. *Phalacrocorax magellanicus* (Gm.) . . Port Charruca,
Port Tamar March 1869.
14. *Phalacrocorax brasilianus* (Gm.) Goods Bay April 1869.
15. *Theristicus melanopis* (Vieill.) Sandy Point Jan. 9, 1869.
16. *Chloephaga antarctica* (Gm.) Goods Bay April 12, 1869.
- †17. *Chloephaga magellanica* (Gm.) Elizabeth Isle Jan. 1869.
18. *Chloephaga poliocephala*, ScL. . . . Port Grappler Dec. 1868
19. *Anas cristata*, Gm. Tuesday Bay Dec. 1868.
20. *Anas versicolor* (Vieill.) Sandy Point Jan. 1869.
21. *Micropterus cinereus* (Gm.) Gallegos River . . March 1869.
22. *Thinocorus rumicivorus*, Esch. . . . Sandy Point March 1869.
23. *Hæmatopus palliatus*, Temm. Ancud Nov. 1868.
24. *Hæmatopus ater*, Vieill. Port Laguna Nov. 1868.
25. *Oreophilus ruficollis* (Wagl.) Gallegos River . . March 1869.

* See Ibis, 1868, p. 183, and 1869, p. 283.

26. *Eudromias modesta* (Licht.) Sandy Point. March 1869.
 27. *Limosa hudsonica* (Lath.) Ancud, Chiloe . . Nov. 1868.
 28. *Sterna cassini*, *Scl.* Coquimbo Aug. 1868.
 29. *Anous inca*, *Less.* Coquimbo Aug. 1868.
 30. *Pelecanoides garnoti* (Less.) Woods Bay April 1869.
 †31. *Nectris amaurosoma*, *Coues* Coquimbo Aug. 1868.
 32. *Podiceps major*, *Bodd.* St. Nicholas Bay. . Jan. 4, 1869.
 33. *Podilymbus podiceps*, *Less. (pull.)* . . Compañã Sept. 1868.

Out of these thirty-three species nineteen have not been included in our former lists. Only three of them, however, call for any special remark; viz. :—

12. PHALACROCORAX CARUNCULATUS (Gm.).

In our first list (*Ibis*, 1868, p. 189) we called this species *P. cirrhatu*s. Both are Gmelin's specific names; but *carunculatus* is the first given by him, and is adopted by Mr. Gray (*Gen. B.* iii. p. 667) and other authors (*cf.* Finsch, *J. f. O.* 1870, p. 375).

Bonaparte (*Consp. Av.* ii. pp. 174, 176) places the two names as separate species and under separate generic heads; but one of the present specimens possesses the white wing-band, which he speaks of as characteristic of *P. carunculatus*, and the other not. This is obviously no distinguishing character; Gmelin mentions it in the diagnosis of both his species. Captain Abbott has written some notes on the breeding-habits of this species and *P. magellanicus* (*Ibis*, 1861, p. 166).

17. CHLOEPHAGA MAGELLANICA (Gm.).

Dr. Cunningham's skin of this Goose has broadish black bars over the whole under-surface, even more than in some Chilian specimens of *Bernicla dispar*, Philippi & Landbeck; and from this and other specimens lately examined we are inclined to consider that the latter species must be reunited to the former.

31. *NECTRIS AMAUROSOMA*, Coues, *Proc. Ac. N. S. Philad.* 1864, p. 124.

The Sooty Petrel obtained by Dr. Cunningham off Coquimbo appears to be referable to this species, lately described by Dr. Coues from specimens obtained near Cape St. Lucas, South California. Prof. Schlegel (*Mus. P.-B., Procellariæ*, p. 26) refers his Chilian specimens of this group to *P. carneipes*, Gould (*cf.* *P. Z. S.* 1837, p. 336). But Mr. Gould says nothing of the

white under wing-coverts that seem to distinguish the present bird from its allies. *N. fuliginosa*, var. *chilensis* (Bp. Consp. Av. ii. p. 202) may also be referable to this species.

Messrs. Philippi and Landbeck, in their lately published catalogue of Chilian Birds*, likewise refer this Petrel to *N. amaurosoma*, and say that it is very common on the coast of Chili.

We may add that the species of *Dafila* received in Dr. Cunningham's first collection and left undetermined by us (Ibis, 1868, p. 189), proves to be a young specimen of *D. spinicauda* (Vieill.), of which living examples have lately been acquired by the Zoological Society of London.

*Additional Note on the Nests and Eggs collected by
Dr. Cunningham.* By the Editor.

In order to make the account of Dr. Cunningham's ornithological collections the more complete, a description of the bird's nests and eggs sent home by him is subjoined. It is a matter of regret that so many of them cannot be determined; but it seems preferable to leave those that are doubtful unnamed than to make hazardous guesses at their identification. Such notes as accompanied the specimens are given in inverted commas.

1. *Sturnella militaris* (L.)? "Gregory Bay. Dec. 1867."

Nest:—more than 5 inches in external and about 3 in internal diameter, well built of roots and grass-stalks, lined with finer portions of the same material.

Egg:— $1.2 \times .78$; white, beautifully marked with reddish-brown blotches, spots, specks, and lines, a lighter shade of the same colour being suffused over a considerable part of the surface.

2. "Obtained in a hole in a bank. Coquimbo. Aug. 1, 1868."

Nest:—about 4 inches in diameter, nearly circular and shallow; foundation of stems and leaves of grass with what seem to be cocoons of some insect and fragments of paper (which last possibly, however, may not have belonged to the original structure); lining, which extends at the top to the exterior, entirely

* Catalogo de las Aves Chilenas existentes en el Museo Nacional de Santiago.

of feathers, and among them a great number of *remiges* of Passerine birds*.

Eggs (5):— 71×5 (average); closely freckled with very pale pinkish-red on a white ground, the last being almost entirely hidden by the markings, so as to have on the whole a strong resemblance to eggs of the British Grasshopper-Warbler (*Locustella naevia*).

3. *Nothura perdicaria* (Kittl.)? “Chilian Partridge.”

Eggs (2):— 2×1.52 , 1.9×1.38 . Leaden-brown, very glossy, as usual in eggs of the *Tinamidæ*, to which these certainly belong.

4. *Theristicus melanopsis* (Lath.). “Elizabeth Island. Nov. 1867.”

Egg:— 2.71×1.86 . Dull surface of a pale greenish-white with engrained blotches (mostly small) of neutral tint, and some few blotches, spots and specks of deep dull brown; towards the larger end some hair-like streaks of a lighter shade of the same, and so far having an *Ibidine* or *Plataleine* character; but at first sight the egg looks as if it might have been laid by an exhausted Gull.

Dr. Cunningham tells me that he was assured by a man, who was in the habit of making yearly visits to this island to collect eggs, that this belonged to *Theristicus*; and I see no reason to doubt the determination, for this egg is not irreconcilable with that described by Mr. Darwin (Zool. Voy. Beagle, iii. p. 129).

5. “Borja Bay. Found on the bare rock. Jan. 2nd, 1868.”

Egg:— 2.41×1.65 . White, sparsely marked with a few well-defined blotches, spots, and specks of two shades of brown (the deepest almost black), and of lavender-grey (the lightest hardly visible). This is possibly the egg of an *Hæmatopus*; but it very much resembles the eggs of some of the larger *Sterninæ*—of the so-called genera *Thalasseus* and *Hydroprogne*, for example.

6. “Tern. Elizabeth Island. Nov. 1867.”

Egg:— 2.21×1.57 . White or pale cream-colour with nor-

* Some of these feathers have been identified by M. Jules Verreaux as belonging to *Astur pileatus*, *Noctua cunicularia*, a *Diplopterus*, a *Sycalis*, *Tanagra striata*, a *Geositta*, one of the *Tinamidæ* and *Porzana albigularis*.

mal *Sternine* markings, and bearing altogether a great resemblance to that of *S. cantiaca*.

7. "Victory Pass. Dec. 1868."

Eggs (2):— 1.84×1.4 ; 1.83×1.36 . These, though much unlike in colour, probably belong to the same species, as they do not differ more from each other than those of *Sterna hirundo* (L.) and other allied species often do. The first is of a rich orange-brown with blotches (having the axes directed spirally) of several distinct shades of greyish-brown, as well as good-sized spots and specks of the darkest; the markings chiefly gathered in a zone near the larger end, and the whole egg presenting much the appearance of one of the *Sterninae*. The second has a pale green ground with subdued markings of lavender-grey and orange-brown, some of the last being striiform, others forming small but regular spots, so as to be like many eggs of normal *Sterna*.

The first of these two eggs was attributed by one of the officers, from whom Dr. Cunningham received it, to an *Hæmatopus*, which, from its small size and general coloration, is, I think, very unlikely. The second is admittedly a Tern's.

8. *Larus dominicanus*, Licht. "Elizabeth Island. Nov. 1867."

Eggs (2):— 2.7×1.89 ; $2.82 \times 1.9^*$. Of ordinary *Larine* appearance, but with rather smaller markings than usual.

9. *Larus* — ?

Egg:— 2.87×1.86 . Disfigured by dirt stains; but seems to be of normal *Larine* character, except that the markings are smaller than in most Gulls' eggs. Probably belongs to the preceding species.

10. *Aptenodytes pennanti*, G. R. Gray. "Falkland Islands."

Egg:— 2.76×2.4 . Pure white.

11. *Diomedea melanophrys*, Temm. "Falkland Islands."

Eggs (2):— 4.05×2.61 ; 4×2.57 . White with blotches, a few spots and multitudinous specks of reddish brown; the markings chiefly at the larger end.

* These dimensions are not very accurate, the specimens being much broken.

12. *Phalacrocorax carunculatus* (Gm.). "St. Magdalena. 4 Oct. 1867."

Eggs (4):— 2.6×1.54 ; 2.54×1.58 ; 2.44×1.63 ; 2.34×1.49 . Of the ordinary character of the genus.

13. *Cygnus nigricollis* (Gm.). "Elizabeth Island. Oct. 1867."

Eggs (3):— 4.06×2.71 ; 4.13×2.69 ; 4.31×2.73 . Of a dull yellowish-white. The size seems sufficient to justify the ascription of these to the above-mentioned species: the only doubt can lie in the direction of *C. coscoroba*.

14. *Chloephaga magellanica* (Gm.). "Elizabeth Island. Nov. 1867."

Egg:— 3.3×2 . Dull creamy-white. Named to me as above by Dr. Cunningham.

15. *Micropterus cinereus* (Gm.). "Elizabeth Island. Nov. 1867."

Eggs (2):— 3.2×2.22 ; 3.3×2.4 . Dull creamy-white.

XLI.—Notices of Recent Ornithological Publications.

I. ENGLISH.

OUR friend Mr. Blanford's volume* is one that we can heartily recommend to our readers. Attached officially as geologist to the late Abyssinian expedition, he was equally mindful of recent and of fossil forms, of the distribution of animal life and of the superposition of strata; while, being on the spot when the army started from Annesley Bay, he had the good fortune of being allowed to accompany its march to Magdala; and though, when that town had become the "scorched rock" the telegraph designated it, he was naturally disgusted at being unable to advance further into Abyssinia; he everywhere made good use of his time, and was, on the embarkation of the forces, permitted, in company with Mr. Jesse, the zoologist of the expedition (who had been compelled to remain in the rear), to get up an excursion to the Bogos country, which

* Observations on the Geology and Zoology of Abyssinia, made during the progress of the British Expedition to that country in 1867-68. By W. T. BLANFORD, &c. &c., late Geologist to the Abyssinian Expedition. With illustrations and geological map. London: 1870. 8vo, pp. 487.

was fruitful in many ways. Mr. Blanford has wisely divided his book into three parts, "Personal Narrative," "Geology," and "Zoology," in the last of which ornithology occupies a prominent position. He obtained specimens of 293 species, six of which were new. Five of these he described last year in the 'Annals of Natural History;' but in the publication of the sixth he was forestalled by Dr. von Heuglin (*cf.* Zool. Rev. vi. pp. 80, 81). All six, however, together with another—*Eremomela griseiflava*, Heugl., are here beautifully figured by Mr. Keulemans. They are *Hirundo aethiopica*, *Phylloscopus abyssinicus*, *Ruticilla* (?) *fuscicaudata*, *Alauda prætermissa*, *Cri-thagra flavivertex* and *Pratincola semitorquata*, Heugl. The observations on these and all the remaining species are well worth the attention of ornithologists; and the whole book is alike creditable to the author, the Bombay government, under whose orders he was acting, and the military authorities who gave him opportunity for his operations.

Of the 'Monograph of the *Capitonidæ*'*, which we had the pleasure of announcing at the beginning of the year (*supra*, p. 156), we have received four parts, and they well carry out the expectations that were entertained of them. A recent paper by the authors on the classification of this family, published in the Zoological 'Proceedings' (1870, pp. 117-120), shows very clearly their views; and we must congratulate them upon their moderation—it has only been necessary to found one new genus! This is for the reception of *Buccanodon anchietæ*, Bocage (P. Z. S. 1869, p. 436), which, having the rictal bristles rudimentary or wanting, the tomia smooth, and the culmen swollen, differs sufficiently from other forms to justify its separation as the type of a new one, to which the name of *Stactolæma* is applied. On the other hand the genus *Buccanodon* is altogether dropped, it being so very similar to *Xylobucco*, which is the older name. The groups *Eubucco*, *Cyanops*, and *Choro-tea*

* A Monograph of the *Capitonidæ*, or Scansorial Barbets. By C. H. T. MARSHALL, F.Z.S., Bengal Staff Corps; and G. F. L. MARSHALL, F.Z.S., Royal Bengal Engineers. The plates drawn and lithographed by M. Keulemans. Parts i.-iv. London: 1870.

of Bonaparte are also rejected, the first being reunited to *Capito*, and the last two merged in *Megalæma*. The *Capitonidæ* may be divided primarily and, perhaps we may say, provisionally into three subfamilies:—*Pogonorhynchinæ*, represented in America and Africa, *Megalæminæ*, in Africa and Asia, and *Capitoninæ*, common to all those continents. But to speak of the 'Monograph' itself; the letterpress has obviously been worked at with much care, and we certainly cannot point out any available source of information which the authors have neglected. If, notwithstanding this, there are persons so hard to please as to be discontented at its being somewhat meagre, they ought to remember that the fault does not lie at the door of the Messrs. Marshall—who themselves have had considerable personal experience of at least the Indian species, and contribute some interesting and unrecorded facts as to the economy. The illustrations, as usual with those of Mr. Keulemans, show that they have been drawn by a close observer of live birds, and are beautifully coloured. It grieves us to say that with all this the printer has performed his task ill; and the authors, naturally more conversant with types of another sort, have not been able to correct his blunders.

The value of Mr. Sharpe's '*Alcedinidæ*'* is so widely known that there is the less need for us to say much of it here—more especially, too, as we should have no chance (even if we wished) of deluding our readers into the belief that in this case the critic knows more of the subject than the author. The work goes on as it was begun, and the three parts now before us deserve all that we have before said of their predecessors (*Ibis*, 1869, p. 215, *et supra*, p. 121). We cannot abstain from noticing the very suggestive difference in style of coloration observable in the young and old of the rare *Alcedo euryzona*, and we suspect Mr. Sharpe has hit the truth in his remark on this point. Of the plates we can only say that if some of the figures are a little stiff and awkward, it must be ascribed to the fact that the artist had already exhausted all the graceful attitudes, and was

* A Monograph of the *Alcedinidæ* or Kingfishers, by R. B. SHARPE, F.L.S., Libr.Z.S., &c. Parts vii.-ix. London: 1870.

too much imbued with the spirit of scientific truth to draw upon his imagination for unreal figures. When this work is finished, it will be almost impossible to delineate a Kingfisher in a position not before represented.

Mr. Wallace has conferred a benefit on the world at large by publishing in a handy volume* ten essays, of which nine have been previously printed in as many different journals, while the tenth now appears for the first time. Most of these, valuable and interesting as they are, lie beside our path; for we have always looked upon what the Germans have taken to call "*Darwinismus*" as not coming properly within the scope of 'The Ibis.' Three of these dissertations, however, will, we are sure, be read or re-read with pleasure by all ornithologists, even though they do not agree with the author; and these are the Third, Sixth, and Seventh of the series as now arranged. To be critical, we must mention that some of the author's assertions seem open to grave objection. Cordially agreeing, as we do, with the general argument in the essay on "Mimicry," we cannot understand Mr. Wallace citing as a case in point (pp. 53, 54) such a statement as this:—"The wood-dove, when perched among the branches of its favourite *fir*, is scarcely discernible; whereas were it among some lighter foliage, the blue and purple tints in its plumage would far sooner betray it." There is no reason to suppose that predatory animals are "colour blind," and indeed all Mr. Wallace's argument would fall to the ground if they were; but we think his authority must have been so afflicted; for what is more unlike the green of any species of *fir* with which we are acquainted than the "blue and purple tints" which make up dove-colour we do not easily conceive; and certainly, according to our own experience, a Pigeon is more conspicuous on any of the dark and commoner *firs* than on a beech, an oak or an elm. Our author's long sojournings in foreign parts must, too, have caused him to forget his birds'-nesting days at home; for he says (p. 216):—"The lark frequents cultivated fields, and makes its nest, on the ground, of grass lined

* Contributions to the theory of Natural Selection. A series of essays. By ALFRED RUSSEL WALLACE. London: 1870. 8vo, pp. 384.

with *horsehair*." Now we suppose he is here referring to *Alauda arvensis*—emphatically *the* Lark of this country ; and we can only say that if we had found such a nest, we should have been exceedingly surprised at learning that it belonged to a Sky-Lark. Again, according to Mr. Wallace (p. 229), the Golden-crested Wren, in exposed situations, builds "a perfect domed nest with a side entrance," which is something we have never seen and certainly never expect to see from this bird. Once more, had our author ever examined the nest of a Waxwing, and traversed the northern forests wherein it breeds—which we suppose he has not, we think he would not have talked (pp. 255, 256) of the harmony of the colours of the bird's plumage and of the black or iron-grey lichens which compose or bedeck its nest. These, no doubt, effectually help to conceal it from hostile eyes ; but we feel sure that there is nothing in the material of the structure or the surrounding vegetation that at all resembles the brighter colours of the occupant. So much of what is advanced in Mr. Wallace's "Philosophy" and "Theory of Birds' Nests" is undeniably true, that we the more regret his calling into court evidence which can be shown to be untrustworthy ; for such cannot fail to deteriorate the effect of that which is to be unreservedly believed, and his case generally is far too strong to require the aid of doubtful testimony. We say thus much without pledging ourselves to the full acceptance of his views as set forth in the Sixth and Seventh Essays. Aply and fairly as he argues, we think there is a good deal to be brought forward on the other side, and for ourselves we should prefer suspending our judgment on the questions involved.

Mr. Morrell's pamphlet* is a well-directed attempt at laying before beginners Prof. Huxley's system of classification of Birds, with which our readers are sufficiently acquainted (*cf.* *Ibis*, 1868, pp. 85, 357), though the public generally is not ; but all except the osteological characters therein given are omitted,

* The Student's Manual of Comparative Anatomy, and Guide to Dissection, &c. Part II. *Sauropsidæ*. Section I. *Aves*. By G. HERBERT MORRELL, M.A., B.C.L., Assistant Demonstrator of Anatomy and Physiology in the University Museum, Oxford. Oxford: [1870.] 8vo, pp. 75.

and thus its value is, to some extent, diminished. We have more than once maintained in these pages that any taxonomic scheme not based upon the aggregate of all the characters which are afforded by animals must be an artificial one; and if it is thought beneath the dignity of Anatomy to regard some because they are superficial, so much the worse, we should say, for the results to which that science may lead us. The author also gives a concordance of Prof. Huxley's scheme with those of Cuvier and of Mr. Gray, which will be found very handy to students, though it contains some errors; for instance, the first group of *Coracomorphæ*, composed of the genus *Menura* only, cannot be said to be "co-extensive" with Mr. Gray's *Certhiidae*. The larger part of the publication, however, is taken up by a condensed summary of the principal points to be noted in the anatomy of Birds, which certainly gives more useful information on the subject than any other English book with which we are acquainted; and the whole concludes with a most practical chapter on dissection. Should the work reach a second edition, as it deserves, we advise Mr. Morrell to consult the introduction to Macgillivray's 'British Birds,' which will, we think, furnish him with some further hints. We hope, too, he will get a better printer, as well as cast aside the false delicacy which makes him silent on one very important group of organs. *Puris omnia pura*.

There has for some years existed a Marlborough College Natural History Society, warmly fostered, if not originally founded; by the Rev. T. A. Preston, one of the masters of the school; and this Society has published half-yearly reports showing a laudable amount of activity among its members. At last one of these young gentlemen has brought out a work on his own account*, which we here notice with pride as showing the spirit of our public-school boys. It was of course not to be expected that such a book would contain any real addition to science, and it does not; but we are greatly mistaken if it has

* Birds of Marlborough, being a contribution to the Ornithology of the District. By EVERARD IM THURN. Marlborough and London: 1870. 12mo, pp. 117.

not a very good effect in encouraging the study of zoology at our schools generally, and at this one in particular. Marlburians past, present, and to come, must ever regard Mr. Everard im Thurn as a hero, fit to match the champions of Harrow and Eton, whose prowess has before been recorded in these pages. We trust he will not repose upon his laurels.

2. FRENCH.

With our very limited space it is difficult to speak in adequate terms of the labours of M. Alphonse Milne-Edwards; but we must briefly recount the progress made in his great work*. The extinct species figured in the five numbers published since our last notice (*Ibis*, 1869, pp. 218-220), are the following:—

“ <i>Rallides</i> .”		Palæoperdix longipes.		} Tertiary.
Aphanapteryx brœckii† (<i>cf.</i> Ibis, 1869, pp. 256–275).		—— prisca.		
		—— sansaniensis.		
		Phasianus medius.		
		—— altus.		
“ <i>Gallinacés</i> .”		—— desnoyersi.		
Taoperdix pessietii.	} Eocene.	“ <i>Colombides</i> .”		} Miocene.
Palæortyx hoffmanni.		Pterocles sepultus.		
—— blanchardi.	} Tertiary.	Columba calcarea.		
—— gallica.				
—— brevipes.				
—— phasianoides.				

More interesting than these, if possible, however, are the remains of still existing species figured as having been found chiefly in the bone-caverns of the south of France, of which certainly one lives no longer in that country; these are, *Tetrao albus*, *T. scoticus* (?), *T. lagopus*, *T. urogallus*, a species of *Gallus*, *Perdix cinerea*, *Coturnix communis*, and, from the peat, *Columba palumbus*. On the importance of the discovery of the Willow-Grouse we before remarked (*Ibis*, 1866, p. 414); and we look forward with great pleasure to the details which must be contained

* Recherches anatomiques et paléontologiques pour servir à l'histoire des Oiseaux Fossiles de la France. Par ALPHONSE MILNE-EDWARDS. Livraisons 26-30. Paris: 1869. 4to.

† We may here remark that Ritter Georg von Franenfeld has lately strongly objected (*Verhandl. z.-b. Gesellsch. Wien*, 1869, pp. 761-764) to the substitution of this name for that of *A. imperialis* given by him.

in the next few *livraisons*, whenever the events that are now so unhappily occurring in France admit of their publication.

But the foregoing has not been the only recent work of M. A. Milne-Edwards. He has contributed an article on "Oiseaux Fossiles" to the second edition of the 'Dictionnaire Universel d'Histoire Naturelle' (vol. ix. pp. 671-719), which gives, as might be expected from the author, by far the most complete general account of Fossil Ornithology we have ever seen, from the Sauropsids (whether they were truly birds or no) which left their footprints on the sands of time in triassic days, and the real "early bird," *Archæopteryx*, to the latest (if they are the latest) victims of extinction, the Great Auk and the Phillip-Island *Nestor*. The perusal of these remarks naturally raises the question, Whose turn is it next?

3. BELGIAN.

In spite of the popular belief to the contrary, the most disagreeable duty of an editor is the having to notice books in praise of which, however willing to do so, he can say nothing—and the more so when the author has himself paid the debt of nature. Such is unfortunately the case at the present moment. The two works of M. Dubois* which have been publishing during the last ten years, or thereabouts, certainly require notice; but we exceedingly regret to say that we have not a good word for them. If these publications left things exactly where they were, it might perhaps not have been necessary to mention them; but this is exactly what they do not do. The author must needs bestow on perfectly well-known species new names. Why should the poor little bird so unobjectionably described more than eighty years ago as *Motacilla superciliosa* be encumbered with a new appellation in addition to the half-dozen or so it already bore? Yet here it figures as "*Phylloscopus pallasii*, Dubois"—the English of which, our readers will be delighted to learn,

* Planches coloriées des Oiseaux de la Belgique et de leurs Œufs. Par CH. F. DUBOIS. Bruxelles. Royal 8vo.

Planches coloriées des Oiseaux de l'Europe et de leurs Œufs, espèces non observées en Belgique. Par CH. F. DUBOIS. Bruxelles. Royal 8vo.

is "Pallaschi's *Regulus*"! They will also, we have no doubt, be grateful for the information respecting the Red Grouse, that "Cette espèce habite les endroits tourbeux de l'Écosse riches en bruyères; elle est plus rare en Irlande et ne parvient qu'accidentellement en Angleterre," and, further, "Le *Lagopus scoticus* ne diffère du *L. saliceti* qu'en ce qu'il ne se revêt pas, comme ce dernier, d'un plumage blanc pour la saison d'hiver. Il est donc probable, comme le fait observer M. le docteur Gloger, que cet oiseau a été introduit, il y a quelques siècles, en Grande Bretagne par des amateurs de chasse." What an encouraging reflection for the acclimatizers!

4. GERMAN.

We cannot pretend to do justice in a few cursory remarks to the recent elaborate work of Drs. Finsch and Hartlaub*. Far more abundant leisure than for many months—we might almost say for years—has been at our disposal would be required to enable us to speak of the 'Birds of Eastern Africa' in any but general terms. Every page of the bulky volume shows the laborious care that has been exercised or even lavished on this labour of love: and if the book is to be at all adequately reviewed, we must bequeath the task to our successor. To say merely that it will be for many years to come the standard authority on the subject of which it treats is only to say that the work is just what might have been expected from its erudite authors, and we confess ourselves utterly incompetent to enter upon its details. With all this, however, we observe with regret that the ultra-purist theories in the matter of nomenclature for which the younger author is distinguished have been so far yielded to by the elder. It seems to us that in following the letter of the supposed principle of scientific name-making, he has lost sight of its spirit and has altogether disregarded the practice of the highest classical writers, who (as there is abundant evidence to prove) seldom hesitated, when it suited their

* Baron Carl Claus von der Decken's *Reisen in Ost-Afrika*. Vierter Band: Die Vögel Ost-Afrikas von Dr. O. FINSCH und Dr. G. HARTLAUB. Mit 11 Tafeln in Buntdruck, n. d. Natur gez. von O. Finsch. Leipzig und Heidelberg: 1870. Imp. 8vo, pp. 897.

convenience, to adopt a barbarous word and naturalize it in their own language. The consequence is a multiplication of synonyms which is as needless as it is mischievous; for nothing really can be so detrimental to the study of any branch of biology as changes of names adopted merely for the furtherance of a whim. We have no compunction in declaring our full acceptance of the rules of the Stricklandian code—a code drawn up after long and deep consideration of the subject in all its multifarious aspects and after repeated exchange of ideas, not only with the best ornithologists of all countries, but with the best zoologists generally, each in the branch of study to which he had especially applied himself. Now *frances-tireurs* who wear no uniform and recognize no discipline are, by the laws of war, subject to severe penalties; indeed there is, according to the publicists, but one step between them and pirates—*humani generis hostes*. No code on any subject whatever was, we believe, so fully submitted to international authority as the Stricklandian; those who infringe it knowingly are, we hold, guilty of a grave offence, and we are sorry to find our respected friends Drs. Hartlaub and Finsch among the number. With this protest we desire to express our extreme admiration of the work.

We have so often been asked to recommend, both to tyros and to adepts, a good work on the general structure and chief peculiarities of birds, and have so often been compelled to say that none such existed, that it is with especial pleasure we at last see the prospect of one which will answer the purpose. In most general works on Comparative Anatomy the class *Aves* receives but scant notice, and is so treated as to be only useful to mere beginners, who find that they are led but a little way on their particular path of study. The “coming man” who appears likely to fill the void is Professor Emil Selenka, of the University of Leyden, whose continuation of Bronn’s work on the Animal Kingdom* deserves high praise; for the two parts relating to

* Dr. H. G. Bronn’s Klassen und Ordnungen des Thier-Reichs wissenschaftlich dargestellt in Wort und Bild. Fortgesetzt von Dr. EMIL SELENKA. Sechster Band. IV. Abtheilung. *Aves*. Lieferungen 1, 2. Leipzig und Heidelberg: 1869.

birds which we have seen, give promise that the book will be most serviceable. The author shows that he is able to make good use of some of the latest discoveries in ornithology, such as those of Professors Gegenbaur and Huxley and of Mr. Parker, while there is proof also of his being an original worker in the same field. The book is well "got up;" the illustrations are wisely chosen and neatly drawn, though we could have wished they had been on a larger scale. An English publisher looking about for a book on birds generally which would be really worth translating, would do well, if the market be not already stocked (as is to be feared may be the case) with a worse article, to make arrangements with the author for the reproduction of this work.

Having said this much in commendation of Prof. Selenka's performance, we may mention two other publications which have appeared within the last two years and have not hitherto been noticed by us. These are by Prof. Claus, of Marburg, and Prof. Victor Carus, of Leipzig, respectively. The first* is a very different sort of book from Prof. Selenka's; and though we have no reason to complain of the amount of space devoted to ornithology, the treatise seems to be considerably behind the age, and contains many inaccuracies. The second† is the product of a transition period—the author striving to "make things pleasant" between discordant classifications, and with the usual unhappy result which attends compromises in any but social and political questions. May we venture to rehearse one article of our faith? No ornithological system can in these days stand the test of time which does not recognize as a cardinal point the primary divisions of the Class as it now exists, the *Ratitæ* and *Carinatae*; and any writer who intercalates the former (call them by what name we please, *Struthiones*, *Cursores*, *Impennes*, or what not) with members of the latter is at variance with the greatest principle that scientific ornithology can teach.

* Grundzüge der Zoologie zum Gebrauche an Universitäten und höheren Lehranstalten. Von Dr. CARL CLAUS. Marburg und Leipzig: 1868. 8vo, pp. 840.

† Handbuch der Zoologie. Erster Band. I. Hälfte. Wirbelthiere, bearbeitet von J. VICTOR CARUS. Leipzig: 1868. 8vo, pp. 432.

5. SWEDISH.

The lands visited by Linnæus form classic ground to the naturalist; and hence Herr Meves in 1867 was led to undertake an "Öländska Resa," but with less general objects than his great forerunner, since ornithology was the single aim of the industrious and intelligent conservator of the Stockholm Museum in visiting Öland. Other specialists, however, have been there also—"Ibises" among the number; for whither have they not wandered? but they do not seem to have found much to say for themselves; and indeed bread in which there is as much sand as flour, and cold boiled eels with beans dressed in treacle, washed down by a spirit in praise of which all that can be said is that it is believed not to have been intentionally methyated, do not make a cheering diet even for the most ardent ornithologist; and he would be scarcely inclined to renew his recollections of such wretchedness by publishing his observations. This perhaps was the cause of our friends' reticence; but Herr Meves, whom we sincerely hope may have fared better, is of stouter heart, and his latest "Contribution to Sweden's Ornithology," in the form of a "Report on a Journey to Öland and Scania" made by the help of the Royal Scientific Academy of Stockholm and printed in their 'Öfversigt' for 1868, deserves some notice here; for though there is perhaps nothing of any remarkable novelty among the author's observations, yet he is so safe a man that we feel we at last possess a trustworthy account of the birds of this not inconsiderable island, which was certainly not the case so long as Lector Westerlund's list* was the only one to be had. We have no wish to be hard on the errors of any body's youth, and it is at least fifteen years since that gentleman published his observations; but one's confidence was rudely shaken in the remainder by the erroneous assertion that *Larus minutus* was commonly found and known by him to breed in the island.

It is so long since we noticed (Ibis, 1865, p. 534) Professor Sundevall's 'Swedish Birds'†, that perhaps some of our readers

* "Öfversigt af Ölands Foglar och Amphibier." Götheborgs K. Vetensk. och Vitterh. Samh. Handl. Ny Tidsföljd, iii. (1853-54) pp. 56-72.

† Svenska Foglarna med text af Professor CARL J. SUNDEVALL tecknade

will have forgotten that such a work was in course of publication. Four more parts have reached us, and we have only to complain of the way it lags towards completion. It may possibly outlast the next series of 'The Ibis;' but we know the blame does not lie with the author.

We are in possession of two more portions of Herr Holmgren's 'Birds of Scandinavia'*, of which we noticed the first part more than two years since (Ibis, 1868, p. 113). They are very fairly done; but the plates at the end are old friends of ours, having served to illustrate Ström's little 'Svenska Foglarna' more than thirty years ago—a fact of which we have not been able to find any mention made by the modern author. The woodcuts also show that the art of "crib" is not unknown in Sweden. Some interesting particulars are given (pp. 725–727) of the attempts at naturalizing *Lagopus scoticus* near Jonsö by Mr. Oscar Dickson, of Gottenburg, which are promising and will, we trust, be successful. Since it seems by all accounts that the Common Partridge was imported into Sweden, there is perhaps the greater hope that the Red Grouse may thrive there equally well in certain localities. These two portions contain the *Accipitres*, *Columbæ*, *Gallinæ* and *Grallæ*: another part ought to complete the work.

6. DANISH.

The subject of Flight having more than once been mentioned in these pages (*supra*, pp. 266–268), we may notice a pamphlet which has reached us from Denmark, though written in English†. The author begins by explaining in the usual manner the way in which a boat sails on a wind, and, thereon basing his explanation of the mechanics of flight, assumes that the motions of wings

och lithographierade af Peter Åkerlund. Häft xvii.–xx. Stockholm: 1866–69.

* Handbok i Zoologi m. m. II. Delen. Skandinaviens Foglar af AUG. EMIL HOLMGREN. Senare Häftet. i. ii. Stockholm: 1867–70. 8vo, pp. 435–930, pls. 6.

† Essay to a Theory of the Flight of Birds, Bats, and Insects. By C. J. L. KRARUP-HANSEN, late Master of Natural Sciences at the Danish College of Haderslev. Copenhagen: 1869. 8vo, pp. 42.

are far more simple than they probably are. He then describes a machine by which he satisfied himself of the correctness of his views, and obtained some of his data (for the calculation of which he gives a sketch), leading him to the marvellous conclusion that it requires the force of one horse-power to raise a weight of 30 lbs. by the action of wings. Consequently a Pigeon weighing $\frac{1}{2}$ lb. exercises the sixtieth part of a horse-power in rising, and a Lämmergeier of 15 lbs. employs half a horse-power. He says nothing about the rapidity with which this expenditure of energy would enable the birds to rise, but implies that no smaller force would permit them to do so—all of which it is needless to refute. Mr. Krarup-Hansen would appear not to have thoroughly mastered the difficult subject of the dynamics of motion in a resisting medium; it is therefore not very easy to follow the steps by which he arrives at his conclusion; but we take leave to question altogether one of his assertions. "It is not seldom," he says (p. 7), "we hear the wings of pigeons, rising into the air, strike together beneath and, though more rarely, above the body of the bird." That the wings strike together above, almost every Pigeon-fancier knows; but that they ever do so beneath is more than doubtful. On the whole, we may say that the author, having assumed an entirely imaginary method of flight, proceeds to reason very fairly on his premisses—but these being (as we imagine) false, his argument comes to the ground.

7. SWISS.

We are much obliged by the receipt of the second part of the second volume of the '*Bulletin de la Société Ornithologique Suisse*,' which contains an excellent Bibliography of Swiss Ornithology by Dr. Carl Stœlker, giving the titles of more than 130 separate publications or papers connected with the subject, besides references to a vast number of mostly shorter notices, the whole being the work of nearly 120 authors. Besides this, there is an interesting essay by M. Jean Saratz on the Birds of the Upper Engadine, which may be read in connexion with the remarks of Dr. Baldamus published in 1867 (*Zeitschr. gesamt. Naturwiss.* lvi. pp. 99, 100), and then a paper communicated by M. Victor Fatio, with the chief points of which our readers

are already acquainted (*cf. supra*, pp. 256–261)*; while the number is concluded by extracts from the “*Procès-verbaux*” of the Society for 1867, 1868, and part of 1869, showing that our Swiss brethren are fully alive to all that is going on in the ornithological world.

8. ITALIAN.

We are indebted to the kindness of our good fellow-labourer Dr. Salvadori for copies of five papers contributed by him to Italian journals. The first, from the ‘Atti’ of the Italian Society of Natural Sciences, is on the occurrence of stray birds in Italy: all those noticed are *Accipitres*, and the most noteworthy is *Buteo ferox*, killed near Genoa in April 1869. The second, communicated to the same publication, contains the description of a bird on which the author subsequently addressed us a letter (*supra*, p. 296), thereby setting an excellent example to all naturalists. The third is from the ‘Atti’ of the Royal Academy of Turin, and describes four new species:—two *Saxicola*, *S. albo-marginata* from the Tunisian Sahara, and *S. brehmi* from Abyssinia and, perhaps, Nubia; *Brachypus urostictus* from the Philippine Islands, and a form from the same locality belonging to the family *Timaliidae*, which, under the name of *Homochlamys lusciniæ*, is described as the type of a new genus, having much affinity to *Trochalopteron*, but with a straight bill and longer tarsi. The fourth paper is an Italian version of that which he and Dr. Giglioli (who has also kindly sent us a copy) have already contributed to our pages (*supra*, pp. 185–187); while the fifth is a review of the Marchese Antinori’s ‘Catalogo’ (*cf. Ibis*, 1864, pp. 400, 401), and contains remarks on about seventy species therein included, besides two others which that author appears to have overlooked. These remarks have been partly prompted by the notes appended by Dr. R. Hartmann to his translation of that catalogue, published by our esteemed contemporary the ‘*Journal für Ornithologie*’; and Dr. Salvadori, in composing his

* We are just able to add, at the moment of going to press, that, as we learn from Mr. J. H. Gurney, Junr., the specimen of *Alca impennis* at Strasburg was uninjured by the recent bombardment of that town, and that the Museum there generally escaped without much injury—a piece of news we are sure that all naturalists will be glad to know.

'Rivista,' has received valuable assistance from Dr. Otto Finsch, which is freely acknowledged. Two plates are appended to this paper, one representing *Eremomela canescens* and *Nectarinia acik*, the other *Drymæca antinorii* and *D. troglodytes*—the last being identical with the *D. ferruginea* figured (not too faithfully, it is said) in our last year's volume (*Ibis*, 1869, pl. iii. fig. 2).

Professor Bianconi has brought to a conclusion his studies of the tarso-metatarsus of birds, the first instalment of which was noticed in 'The Ibis' long ago (1864, p. 399). His object has been to determine the affinities of *Æpyornis*; and he arrives at the conclusion that it was a Vulture, and probably the veritable "Roc" of Marco Polo. Whether his opinion has undergone any change since the recent discoveries of M. Grandidier, so elaborately laid before the world by Professor Alphonse Milne-Edwards (*Ann. Sci. Nat.* 5e sér. xii. pp. 167–196), we do not know, but we can hardly imagine any one now doubting that, whether "Roc" or not, *Æpyornis* was allied to the struthious birds. These papers of Prof. Bianconi's are published, like the former one, in the *Memoirs of the Academy of Sciences of Bologna*.

9. PORTUGUESE.

In the 'Jornal de Sciencias' of Lisbon for the present year Prof. du Bocage has published a Fourth List of Birds from the Portuguese possessions in Western Africa, sent thence by Sr. Anchieta, to whom so much was previously due (*Ibis*, 1869, p. 117), and Srs. Toulson and Freitas Branco. This list contains notes on 135 species, of which some are described as new:—a *Cypselus*, left unnamed, *Anthus angolensis*, *Turdus verreauxi*, *Oriolus anderssoni* (cf. *supra*, pp. 218–220), *Telephonus anchietae*, *Lamprocolius acuticaudus* and *Francolinus hartlaubi*. In thanking the author for his kindness in forwarding us a copy of this list, upon which we regret that we have not space to dwell, we wish him every facility for the continuance of his valuable labours.

10. AMERICAN.

It is rather difficult to decide under what heading to include a book written by a citizen of the United States, illustrated by a

German, printed in England, and published nowhere; but we are ready to accord to the author's nationality all the credit (and it will be by no means small) which belongs to the 'Monograph of the *Phasianidæ*'*, of which the first number appeared in the course of the summer. Just as the joint product of the three species of Pheasant (the Common, the Ring-necked, and the Japanese) is a finer bird than any one of its progenitors, so is this, the offspring of three countries, the most beautifully finished ornithological work on which we have ever set our eyes. The drawing and colouring of the plates, after designs by Mr. Wolf, is indeed worthy the graceful and splendid objects they represent; and in the letterpress there is a manifest improvement over Mr. Elliot's former works. Among the species here figured (several for the first time) are four which were originally brought to notice in 'The Ibis'—*Polypectron germaini*, *Argus grayi*, *Cerionis blythi*, and *Numida verreauxi*, for which last the author makes out a very fair case (*cf. supra*, pp. 300, 443, *et* 444). With regard to the *Cerionis*, we may remark that the type of the species is the very bird which was last year taken to be a *C. temmincki* by Mr. Jerdon (*supra*, p. 147), who subsequently described it as new under the name above given in the 'Journal of the Asiatic Society,'—and also, though it is a matter of slight moment, that Mr. Elliot copies the erroneous statement made in the Zoological 'Proceedings' for the present year (p. 162), wherein it is said that the first notice of this bird was contained in a letter addressed by Mr. Jerdon to our distinguished predecessor, and "was accompanied by an enclosure upon the same subject for publication in 'The Ibis,' which was duly forwarded to the Editor of that journal"—the fact being that exactly the converse was the case. We heartily congratulate Mr. Elliot on this new undertaking, and trust it will meet with the encouragement it so fully deserves.

The ornithologists of the United States have not lost much time in making use of "Walrussia"—the last addition to the

* A Monograph of the Phasianidæ or Family of the Pheasants. By D. G. ELLIOT, F.L.S., F.Z.S., &c. Part i. Published by the Author. June, 1870. Imp. fol., 15 plates.

territory of the Great Republic; and two articles on the birds of Alaska in the 'Transactions of the Chicago Academy of Sciences' and also published separately *, are of more than usual interest. The expedition before mentioned by us (*Ibis*, 1865, pp. 239, 240) sailed northwards from San Francisco in July 1865, and visited various places on either side of the Pacific—Mr. Kennicott, the chief of the division of naturalists, remaining to winter on the Yukon, where, in the month of May following, this indefatigable traveller died of a heart-complaint aggravated by exposure and privation. The direction of the scientific corps then devolved upon Mr. William H. Dall; and well he seems to have performed its duties. We have no room to chronicle his various journeys and explorations; suffice it to say that their ornithological results are most instructive, and are admirably set forth by himself and his colleague Mr. Bannister, assisted by further observations by Prof. Baird. Five new species were obtained, while three more, though previously known, are new to the American fauna. The most important feature of these discoveries is that they show a more decided Palæarctic bearing in this part of the Nearctic region than had hitherto been suspected. We have *Budytes flavus*, abundant at St. Michael's, in Norton Sound, a *Phyllopneuste*, described as new (*P. kennicotti*, Baird) and obtained at the same place, a *Pyrrhula* from the Yukon, which, though designated (by Prof. Baird) *P. coccinea*, var. *cassini*, appears to be a very good species, *Limosa uropygialis*, Gould, and *Graculus bicristatus* (Pall.)—none of which have before been recorded from the New World; while the remainder, now first described, are *Troglodytes alasensis*, *Leucosticte littoralis*, and *Sterna aleutica*, all of which birds, with some others, are figured. We may remark that Prof. Baird follows Cassin and Dr. Brewer in applying the name "*Falco sacer*, Forster," to the large Falcon found in Alaska, though he does so provisionally. We have before stated (*Ibis*, 1862, p. 51, note) that we were at a loss to refer this name to any known species; but if the character of the *yellow*

* List of the Birds of Alaska. With biographical Notes, by W. H. DALL and H. M. BANNISTER. With Descriptions of New Species, by Prof. S. F. BAIRD. Chicago: 1869. Roy. 8vo, pp. 267, 375, pls. 8.

irides, especially dwelt on by Forster, can be trusted, his bird must in all probability have been an immature example of *Astur atricapillus*. As this, however, must always remain doubtful, we hope no nomenclator will wish to use for the latter a name which has been attached for centuries to an altogether different bird, the Saker of falconers.

In honour of Señor Vargas, a distinguished citizen of Venezuela and the founder of the University of Caraccas, where, among other things, he was Professor of Anatomy, a scientific journal bearing the name of 'Vargasia' has been established by the Society of Physical and Natural Sciences at that capital. The fifth number of this periodical contains an account by Mr. Anton Goering of a visit to some unexplored caves inhabited by the *Steatornis caripensis*. This locality is situated two days' journey from Caripé (the original "Cueva del Guacharo" discovered by Humboldt being only a short distance from that city), and consists of two caves—the "Gran Cueva" and the "Cueva Pequeña," the former of which is said to contain more Guacharos than that which was before known.

11. AUSTRALASIAN.

The New-Zealand Institute has not been slow in following up its first good stroke (*supra*, pp. 135, 136) with another; and the second volume of its 'Transactions and Proceedings' is of excellent quality. We must indeed congratulate our antipodal friends on the discovery that they possess so intelligent, so observing, so accurate, and so enthusiastic an ornithologist as Mr. Thomas H. Potts, of Canterbury, whose paper "On the Birds of New Zealand" we would willingly, did space permit, have reproduced in our pages. This treats almost entirely of the habits of the birds of the country as observed by himself and his sons throughout a long residence, and will be of especial interest to oologists, to whom, indeed, New Zealand has hitherto been almost a *terra incognita*, the nests, several of which are very well figured, and eggs of fifty-three species being described at greater or less length. In the introductory observations, and, one may say, throughout the whole article, the

author discusses the various causes that have led almost to the extinction of so many birds in the colony, most of which causes, we fear, are still in operation, and are such that, unless some counteracting means be taken, they will in a few years utterly destroy the native avifauna, replacing it by a heterogeneous mixture supplied by the Acclimatization Societies. The enormous eggs laid by our old friend the Kiwi in the Regent's Park are pretty well known; but the wild *Apteryx australis* surpasses the efforts of the captive bird, and an egg in the Canterbury Museum measured 5 inches 1 line by 3 inches 4 lines. *Anarhynchus frontalis* does not seem to be so rare a species as was thought; and its eggs and young have been discovered by Mr. Potts, the former usually laid on the pebbles of some dry river-bed. In another ornithological paper Capt. Hutton records the addition to the list of New-Zealand birds of *Æstrelata gouldi* (cf. Ibis, 1869, pp. 351, 352) and *Nyroca australis*, and he also has some notes on the introduction of Pheasants into the islands. His paper on the flight of the Albatros, which we before noticed (*suprà*, p. 122), is also reprinted, as well as some comments upon it by Mr. S. Webb, of Otago; but as these are entirely mathematical in their kind, we need not dwell upon them here. The last contribution to ornithology in the volume is a brief abstract of some preliminary notes (p. 403) on a fossil Penguin, of which, we doubt not, we shall hear more in due time.

12. INDIAN.

To give his ornithological brethren in India the means of knowing what will be most useful for them, Mr. Allan Hume has commenced the publication of a series of 'Rough Notes'* transcribed from various sources. Many of them are original remarks, by himself or his numerous correspondents, which have not before been printed, while the remainder are extracts from the pages of 'The Ibis,' or from different standard works of a kind not easily carried about, even if they are possessed, by Englishmen in India; and the intent of the whole is that it

* My Scrap-book: or Rough Notes on Indian Oology and Ornithology. Edited by ALLAN HUME. Part I. *Raptores*.—No. 1. Calcutta: 1869 (London: E. Bumpus, Holborn Bars). 8vo, pp. 237.

should form a kind of supplement to Mr. Jerdon's well-known volumes. It naturally follows that such a compilation must be of very unequal merit; but that it will be of great service to Indian ornithologists is not to be doubted. The author, we think, in his preface depreciates his materials rather too unduly. Rough the notes are, essentially and avowedly; but so are diamonds before they are cut; and if the exigencies of the occasion have hindered him from presenting his jewels in an attractive form, he may be sure that he has among them some gems that will finally repay for setting. But the value of this 'Scrap-book' lies not alone in what it contains; it shows, and often pointedly, in what direction further information is needed; and, unless we err, the latter character is the one likely to prove most important. The notes in the part before us are of such a length that they do not even reach to the end of the diurnal *Accipitres* of India, but comprehend only the first two score of Mr. Jerdon's species, together with five others, of which three are given as new, though, thanks to Mr. Hume, our readers have been for some months acquainted with their diagnosis (*Ibis*, 1869, p. 356), and the remaining two are inhabitants respectively of the Andaman Islands and Ceylon. To Mr. Gurney we are indebted for pointing out some of the more interesting features of this book, in some notes with which he has favoured us. According to him, the Himalayan *Gyps fulvus*, which Mr. Hume is now inclined to separate as distinct, under the name of *G. himalayensis* (p. 12), is a good species, differing from the true *G. fulvus* by having the fourth primary the longest. On the other hand, *G. fulvescens* (*Ibis*, *l. c.*) Mr. Gurney considers to be the real *G. fulvus* in its immature condition. *Falco atriceps* (*l. c.*) he is disposed to accept as distinct, and informs us that examples of it are to be found in the museums of Norwich and Leyden—the specimen in the latter (no. 6 of Prof. Schlegel's Mus. P.-B. *Falcones*, p. 6) being labelled "*F. barbarus*." It would seem that it is *Erythropus amurensis** (*Ibis*, 1868, p. 41, pl. ii.), and not *E.*

* We regret to find that Drs. Hartlaub and Finsch have (*Vög. Ost-Afr.* p. 74) given another name to this species. Surely the fact of calling a bird after the locality in which it was first discovered does not imply that it occurs nowhere else!

vespertinus, that is found in India, as there is a specimen of the former from Nepal in the British Museum. Mr. Gurney further tells us that he regards *Accipiter melanoschistus* (Ibis, 1869, p. 356) as distinguishable from *A. nisus* by its conspicuously larger size, and that he has arrived at this conclusion after a recent comparison of specimens of each species in Lord Walden's collection. These seem to be the points chiefly requiring notice here; and we are glad to learn that the second part is already in the press. The work is dedicated to Messrs. Blyth and Jerdon as those who "have done more for Indian ornithology than all other modern observers put together." But the last sentence appears to us to be rather too sweeping when we remember the labours of Mr. Brian Hodgson.

To the 'Journal of the Asiatic Society of Bengal' for 1869 (vol. xxxviii. pt. 2, pp. 164-191) Mr. Blanford has contributed a note-worthy paper, chiefly on some birds of Central, Western, and Southern India, contained in three collections made (1) in Nagpoor, Chanda, and the Upper Godavery, (2) at and near Khandalla on the Western Ghauts, and (3) on the Neilgherry hills. Some of the most interesting novelties in the first of these were mentioned by the author in a letter he formerly addressed to us (Ibis, 1867, pp. 461-464); but the present paper contains much useful information, especially in the way of details of the relative distribution of certain migratory species. The most important fact, perhaps, here made known is the detection, by Mr. Fairbank*, on the Pulney hills in Southern India of a new species of *Trochalopteron*, designated by Mr. Blanford *T. fairbanki*, of which a good likeness is given. The species would seem to be, on its own hills, the representative of *T. jerdoni* of the Wynaad; and between the ranges of these two lie the Neilgherries, inhabited by *T. cachinnans*.

The same 'Journal' for 1870 contains some brief notes on the

* To this gentleman is also due the discovery of the beautiful *Callene albiventris*, described and figured by Mr. Blanford, P. Z. S. 1867, p. 832, pl. xxxix.

fauna of the Nicobar Islands, by Mr. V. Ball, of the Geological Survey of India, who paid a short visit of eight days to the new settlement at the Nancowry harbour, situated between the northern coast of that island and the southern coast of of Camorta, and to Trinkutt, all three belonging to the middle group of the Nicobars. The author had but little time for collecting birds; and among the twenty-one species observed by him, only two (a *Turnix* and an *Ægialitis*) had not been before recorded from Camorta; unfortunately, of neither were specimens preserved for determination. We have only room for one remark, which is that *Eulabes andamanensis* (Ibis, 1867, p. 331) was found on that island, thus justifying Lord Walden's belief in its range extending from the Andamans to the Nicobars.

XLII.—*Letters, Announcements, &c.*

The following letters, addressed "To the Editor of the 'Ibis,'" have been received by us:—

Calcutta, April 2, 1870.

SIR,—I send you a few notes on the Ornithology of the Cardamum Hills of Travancore, taken during a six weeks' tour I lately made there; but, as Elephant-hunting was my chief object, I was unable to form a large collection. Many of the species, however, are interesting, and show a strong resemblance to the Cingalese birds. The Cardamum Hills extend from latitude 9° N. to latitude 10° 20', where they approach the Pulney and Annamallay ranges, and are from 3000 to 8000 feet in height. They rise very abruptly from the plains on the east, and slope gradually to the west coast, in which direction the Perryaur, the only important stream, also flows. In many parts they are covered with magnificent virgin forest up to the height of 6000 feet; but a great deal of the country is open, covered with tall lemon-grass or scattered trees, and the valleys are filled with dense bamboo- or reed-jungle. Rhododendrons flourish above 6000 feet; and at that elevation most of the birds of the Neilgherries are found. One remarkable feature in the ornithology of the district is the absence of Birds-of-prey; for,

with the exception of *Gyps bengalensis*, *Otogyps calvus*, and *Neophron percnopterus*, and a few Kites, *Milvus govinda*, I rarely saw a large bird. *Ketupa ceylonensis* is common in the lower valleys; and I observed *Asio brachyotus* on the open hills. *Cypselus melba* is numerous at the highest elevations; and I got one specimen of the pretty little *Hirundo domicola*, which hitherto has, I believe, been only found in India on the Neilgherries. *Caprimulgus monticolus* is abundant; and many beautiful birds, such as *Merops quinticolor*, *Coracias indica*, *Loriculus vernalis*, *Pericrocotus flammeus*, and *Dendrophilus frontalis*, light up the forest with their brilliant colours. The monotonous note of *Megalama viridis* is heard in the forest during the whole day; and another pretty Barbet, *Xantholama malabarica*, is not uncommon. Perhaps the most remarkable bird found in the forests is the great *Homraius bicornis*, which sometimes assembles in flocks, of from twenty to thirty, at some favourite fruit-tree. Their deep croak and rushing wings are often heard in the heavy forest as well as in the more open *sholahs*; and the small Hornbill, *Tockus gingalensis*, is equally common with, and far more easy of approach than his large cousin. *Palaornis columboides* here replaces the Green Parrakeet of the Plains, but prefers the jungle to the open country. Of Woodpeckers three or four species are common, especially *Chrysocolaptes sultaneus*, *Hemicercus canente*, and *Gecinus striolatus*; but I only once saw the fine *Muelleripicus striolatus*. The Shrikes were poorly represented by *Tephrodornis sylvicola*; but their absence was made up for by *Edolius malabaricus*, *Tchitrea paradisi*, *Pericrocotus ferrugineus*, *Eulabes religiosa* and other beautiful birds. On the open grassy hills *Pomatorhinus horsfieldi*, *Pratincola caprata*, *Otocompsa jocosa* and *Corydalla rufula* were common, while in the tall forest *Iaxus luteolus*, *Criniger icterica*, and *Alcippe pæocephala* found a congenial abode. Of Warblers I saw but very few species, and only obtained *Phylloscopus viridanus*. Single specimens of *Parus atriceps*, *Malacocercus subrufus*, and *Oreocates cinclorhynchus* are in my collection, also *Oriolus kundu* and *Hemipus picatus*, which is common about the little mountain-streams. The fine large *Carpophaga insignis* is very common,

and that lovely bird *Chalcophaps indica* was often seen flashing through the trees. Long after dark the loud scream of *Pavo cristatus* could be heard in the jungle; but in the dense bush in which it lives I rarely saw it. *Gallus sommerati* was very common, especially in bamboo-jungle; and the only other game-birds I saw were an occasional *Galloperdix spadicea* and *Perdicula erythrorhyncha*, which last was extremely abundant in the long grass. *Grallæ* and *Anseres* were almost entirely wanting, owing, probably, to the scarcity of water; but I saw one or two *Gallinago nemoricola*, and a magnificent pair of *Graculus javanicus* were fishing on the Perryaur. Of all the inhabitants of the hills nothing interested me so much as the herds of wild Elephants which abound there; and, owing to the care with which they are protected by the Travancore Government, and the value of the Cardamums grown in their favourite forests, I have no doubt they will remain for centuries in undisturbed possession of these mountains. I hope before long to have some notes to send you from another part of India, and remain

Yours faithfully,

H. J. ELWES.

Peshawur, April 23rd, 1870.

SIR,—I find that one of the Swans must be included in our Indian avifauna. Fine specimens have, on two occasions, been killed at Rawul-Pindee; and several have been obtained in the neighbourhood of Peshawur. One of these latter has been preserved in the local museum. No works of reference were available, and I am not well acquainted with this genus; but the specimen appeared to me identical with the species that I have seen killed in our Norfolk marshes. I will let you know hereafter what the species really is.

Indicator xanthonotus was supposed to have been found in Sikhim only. Scarcely any of our museums contain specimens; and I only know the species from Dr. Jerdon's excellent figure in his 'Illustrations of Indian Ornithology.' During the last two years Colonel Delmé-Radcliffe has procured two or three

specimens (one of which he has kindly presented to me) in Huzara, of an *Indicator*, which is probably *I. xanthonotus*, although it differs from that figure in being of a somewhat deeper brown, and in having the middle of the back pale straw-colour, and the lower part of the back and rump orange-yellow, instead of the whole of the back and rump golden-yellow. If distinct, I would name it, after the accomplished Falconer who first brought it to notice, *I. RADCLIFFII*.

Hodgsonius phœnicuroides, supposed to be confined to Sikhim, is not uncommon in Cashmere: the Marquess of Huntly procured a specimen there; and Colonel Maister has just given me another, which he shot there last year. I am at a loss to comprehend how Dr. Jerdon could place this bird, along with *Brachypteryx*, among the Thrushes. It cannot possibly be dissociated from *Larvivora*, *Cyanecula*, and so forth.

Sturnus unicolor, a well-marked species, as I now consider it, with its yellow bill and long brilliant neck-hackles, hitherto recorded only from Cashmere, I found to-day breeding in holes in willows in Peshawur—the nests, composed of grass, all ready, and both birds constantly in and out of the holes, but no eggs laid as yet.

Picus scindianus, supposed to belong chiefly to Scinde, but already recorded by me, on the strength of a specimen obtained by Capt. C. H. T. Marshall, from Bhawalpoor, I have recently found very common in the Salt-range, and everywhere west of the Sutledge, at Rawul-Pindee, Attock, and Peshawur; and Colonel Maister has given me a specimen killed at Goolmerg, in Cashmere.

The avifauna of the Peshawur valley needs careful study. Numerous species, hitherto unrecorded as Indian, or only recorded from the Himalayas, appear not uncommonly there; and many other novelties may be expected to be met with.

Passer salicicolus, *Ruticilla rufiventris* and *Ammomanes lusitana* are all apparently breeding here now; I have not succeeded in finding either eggs or nests, nor, occupied as I am, am I likely to do so; but the condition of the testes and ovaries leaves no doubt on the subject.

Yours &c.,

ALLAN HUME.

Simla, June 24th, 1870.

SIR,—Your readers will be familiar with the beautiful figure of *Ruticilla ruficularis*, Moore (P. Z. S., 1854, p. 27, pl. lix.). The exact *habitat* of this species has not hitherto, I believe, been known; the only specimens in existence formed, it is said, part of Griffith's Collection in the East-India Company's Museum. Mr. Moore originally gave the habitat as Northern India; but both Dr. Jerdon and Mr. Blyth, regarding, I fancy, the species as a purely Afghan one, excluded it from our Indian avifauna. During the early part of the present year Major Delmé-Radcliffe wrote to me, mentioning the occurrence, near Attock, of considerable numbers of a large Redstart with which he was not familiar; and later he kindly carbolized a couple, and despatched them to me. Being absent from headquarters, I have only just received the specimens, which prove to be a male and female of the species just named. In the interim I have visited Attock and Peshawur, and, guessing from his description what the birds were, made all possible inquiries about them. It appears that they are regular winter visitants to the Peshawur Valley, extending at least as far down as Attock (where they were very numerous during the past cold season), and leaving early in April. Next year I hope to secure a plentiful supply. At present it is gratifying to have rediscovered, as it were, a lost species.

A correspondent of yours inquires whether the Black-winged Stilt bred this year at Suttaupoor. They did, in unusual numbers; and Baboo Kalee Narain reported early having collected over two hundred and thirty eggs, and would, I believe, have gone on collecting an indefinite number (he being very much delighted at his ornithological discovery) had I not pointed out to him that we had already sufficient to supply all the museums in India with specimens.

The eggs and nest of *Reguloides superciliosus* will possess considerable interest to European readers. I did not, unfortunately, take them myself; but I have every reason to believe them genuine. They were brought to me by a native collector with the parent bird, which was caught by hand on the nest. I had never instructed him to search for the eggs of these birds; and

he had not the slightest idea when he brought them that they were of any value. He collected at or about the same locality the eggs of some thirty species of birds, which he brought with the parents, with all of which I was previously acquainted, and all of which were correct. The nest was found at Chimbla, beyond Kotegurh, some five marches north of Simla, in the Himalayahs, at an elevation, as far as I can judge, of about 7000 feet. It was placed on, or in, a low flat branch of a fir-tree, and was almost globular in shape, and composed of moss, lichen, and some kind of hair or fur. It contained five fresh eggs, which are of about the same size as those of the Willow-Wren or the Chiffchaff, and have something of the same general character as the eggs of these two species, but they are slightly more pointed towards the small end than either. The ground-colour is a very delicate greenish-white; and they are thinly speckled and spotted, chiefly towards the large end, with a sort of burnt-umber brown, which in some spots is almost black, and in others excessively diluted and pale. The eggs have scarcely any gloss. They vary from $\cdot 68$ to $\cdot 7$ in. in length, and from $\cdot 54$ to $\cdot 55$ in. in breadth. They were procured on the 24th May 1870. Of course, after all, these eggs may not be genuine; but there are *prima facie* strong grounds for believing them to be so.

Another species, which is a novelty, at any rate in the plains of India, is *Alauda pispoletta*, Pallas. Amongst a large collection formed for me this cold weather in the Sirsa district by Nizam Oodeen Khan, I found three specimens of this Lark. I had never seen it before, but recognized it at once by its very short conical bill, its short feet and claws, like the Short-toed Lark, and its breast striated like the Sky-Lark's. I cannot understand how this Lark ever could have been united by Bonaparte with *Alaudula raytal*. There must have been some mistake, because the colouring of the two is so very distinct. The general tint of the latter is greyish-white, while that of the former is more that of the Short-toed Lark—a sort of pale fawn-colour with a slightly ashy shade. I mention this particularly, because Dr. Stoliczka, the only other Indian ornithologist who has ever before noticed this species, has, in my opinion, wrongly identified his spe-

cimens. In his "Ornithological Observations in the Sutlej Valley" (cf. *Ibis*, 1869, pp. 212, 213), he remarks that *A. pispoletta* "will stand as a distinct species; it was procured by me near Korzog in Rupshu, but appears to be much rarer than *A. raytal*; it most probably also migrates in winter to the lower hills and to the plains of North India." He then goes on to say that in general colouring it is very like *A. raytal*, "except that the ear-coverts are more whitish, and the feathers on the head and nape very narrowly streaked with dusky-brown, while they are more distinctly streaked in the former species; in size it is decidedly larger, the bill being in proportion rather long and slender, horny above, pale yellow below at the base, the upper mandible at the tip a little less curved; legs fleshy brown; length of wing 3·75 inches; tail 2·5 inches."

Now this, in my opinion, is certainly not *A. pispoletta*. The colouring, at any rate in the cold season, when my birds were killed, has a fawn-coloured tinge, utterly different from any thing that *A. raytal* ever has; and so far from the bill being in proportion rather "long and slender," the most characteristic feature of this species is its very short, small conical bill; moreover the wings in my specimens vary from 3·9 to 4·1 in.

On the whole, I can scarcely doubt that Dr. Stoliczka was in error, especially since Herr Von Pelzeln omits all notice of *A. pispoletta* in his review of Dr. Stoliczka's Collection (*Ibis*, 1868, p. 319); and if so, these specimens of mine are the first that have been obtained in this part of the world. It is just possible, however, that I myself am in error, as I have no copy of Pallas's 'Zoographia' by me to refer to: but my Larks are, I think, clearly those described in Gerbe's edition of Degland's 'Ornithologie Européenne' (ed. 1867, i. p. 343), the details given in which are founded on a paper by M. Vian (*Rev. Zool.* 1861, i. p. 346).

Yours, &c.,

ALLAN HUME.

Simla, July 7, 1870.

SIR,—When last staying with me, my friend Dr. Jerdon showed me what he considered to be a new *Cypselus*, of the *C. butassiensis* type, which he named *C. tectorum*. This species

was found at Asaloo, on the North Cachar Hills, by Major Godwin Austen, and was also procured from the Garrow Hills by Dr. J. Anderson. Later, Major Austen found it abundantly about the huts of the Garrows. It breeds at Asaloo in April and May, at heights of from 2500 to 4000 feet, constructing a very small shallow nest, some 2·25 in. in diameter, with some feathery seed agglutinated, as is so common in this family. The nest is attached to the palm-leaf thatch of huts. The huts have a double roof of palm-leaves; and it is on the upper surface of the lower layer of palm-leaves that the nest is made.

Major Godwin-Austen has subsequently noticed this species in the Journal of the Asiatic Society. My reason for thus prominently calling attention to it is, that, after carefully examining a specimen, it appears to me to be unquestionably *Cypselus infumatus*, Sclater (P. Z. S. 1865, p. 602), hitherto only recorded from Borneo. Specimens have been sent home I know; and I am anxious to learn as soon as possible whether this identification of mine is correct or not*. Yours, &c.,

ALLAN HUME.

Calcutta, July 9, 1870.

SIR,—In 'The Ibis' for April last (*supra*, p. 166) Mr. Blyth suggests that the female specimen of *Cyornis tickellæ* obtained by me, in plumage precisely similar to that of the type in the Calcutta Museum (presumed to be a male), is an exceptional case. This, however, is not so; for I have since obtained three other examples in like plumage, the sex of each of which I myself have ascertained by dissection, and all were females. Unfortunately I have not been able to examine a male.

In the same place Herr von Pelzeln's opinion as to the identity of *Erythrosterina leucura* and *E. parva* is disputed. Mr. Blyth is unmistakably correct; and the specimens in the Museum here leave no room for doubt. But as the former, I believe, is, in India, confined to Bengal and the neighbourhood,

* [Mr. Jerdon has been kind enough to inform us that he believes Mr. Hume to be right in the opinion above expressed—and also that the *C. tectorum* is certainly identical with Mr. Swinhoe's *C. tinus* (*supra* p. 90), as appears on a comparison of specimens.—ED.]

perhaps extending southward along the east coast of the Peninsula, Herr von Pelzeln's specimens belonged of course to the latter. The birds are migratory, and cross the Himalayas twice a year, the eastern and western forms doubtless crossing, if they do not also breed in, the eastern and western Himalayas respectively. In suggesting that *E. leucura* is only found, in India, in Bengal, I by no means intended to say, as Mr. Blyth has understood me to say, that it is not found out of India. I have obtained it myself in Pegu; Mr. Swinhoe mentions its occurrence in Hainan (*supra*, p. 247); and I have seen specimens from China. With respect to the distribution of *E. parva*, I would particularly call attention to Mr. Hume's observations (J. A. S. B. 1870, p. 116), which completely confirm my suggestion of its being the only species found in Western and North-western India. Mr. Hume also concurs with me in believing *Circus melanoleucus* to be restricted to the eastern part of the Peninsula. These are very interesting instances of the fact, to which Mr. Swinhoe called attention (*Ibis*, 1867, p. 234), of the great line of division in the Indian peninsula between eastern and western migratory forms, and form part of the evidence on the strength of which I dispute the lumping of the fauna of India proper with that of the so-called and (in my humble opinion) miscalled "Indian Region", a subject on which I hope to have more to say soon.

I take this opportunity of apologizing to the Zoologisch-botanische Gesellschaft of Vienna for having attributed to them in my recent work (*Geol. and Zool. Abyssinia*, p. 211) the publication of Dr. von Heuglin's "Systematische Uebersicht der Vögel Nordost-Afrika's", that paper having been published in the 'Sitzungsberichte' of the Vienna Academy; and I much regret my mistake in blaming the wrong body for its publication. I am indebted to Dr. Finsch for calling my attention to my blunder.

I am, &c.,

W. T. BLANFORD.

16 August, 1870. .

SIR,—In 'The Ibis' for the present year (*supra*, p. 135), reference is made to a paper contributed by Mr. Walter Buller to

the 'Transactions of the New Zealand Institute' for 1868 (i. p. 106), in which that ornithologist gives his reasons for supposing *Hieracidea brunnea*, Gould, to be only the immature state of *H. novæ-zelandiæ* (Gmelin). I venture to think that Mr. Buller's paper is not altogether conclusive as to this being the case; and I wish to state the question as it presents itself to my own mind, in the hope that Mr. Buller and other naturalists in New Zealand will still further investigate this subject.

The British Museum and some other European collections contain specimens of two apparently distinct New-Zealand Falcons, one of which considerably exceeds the other in size, the larger being *H. novæ-zelandiæ*, the smaller *H. brunnea*; and the question which requires solution is whether this difference in size is specific or sexual. In favour of its being sexual there is the fact that both birds have an adult dress, which is distinct from the immature plumage, and that the coloration of the larger and smaller birds is identical, both when immature and also when adult. The following measurements will serve to show the disparity in size between the two supposed species:—

	Long. tot.	Alæ a carp.	Caud.	Tarsi.	Dig. med. c. ung.
<i>Hieracidea novæ zelandiæ.</i>					
Adult, Auckland Is. <i>Mus. Brit.</i> . . .	18	11·5	7·75	2·25	2
” ” . . .	19·5	11·75	8·25	2·25	2
Immature, New Zeal., <i>Mus. Norvic.</i> . .	19	11·75	8	2·25	2
<i>Hieracidea brunnea.</i>					
Adult, New Zealand, <i>Mus. Brit.</i> . . .	15	9·5	6·25	2	1·5
” ” . . .	14·75	9·25	6·25	2	1·5
“♀” immat., New Zeal. <i>Mus. Norvic.</i>	14·5	9·25	6	2·5	1·75

Unfortunately, in none of these specimens, except the last, is the sex recorded; if this is correctly marked as a female, it of course proves the larger race to be specifically distinct; but it is possible that this specimen may not have been correctly labelled.

I may add one circumstance which has a slight bearing in favour of the distinctness of the two species, viz. that I have heard or read on the authority of some person who had observed both birds in a state of nature, that the smaller one is much more active and daring in its habits than the larger; but I cannot now recollect from whom I received this information, though I have a strong impression that it came from a trustworthy source.

Mr. Buller in the same paper (*loc. cit.*) states that "*Falco subniger* and *Milvus isurus*, which are quoted by Mr. Gurney as New-Zealand birds, have never been found in this country"*. My authority for quoting New Zealand as a *habitat* for the former was the veteran ornithologist, M. Jules P. Verreaux, who informed me that a New-Zealand specimen had passed through his hands. With regard to the latter, the Norwich Museum possesses a specimen, which I obtained from Mr. A. D. Bartlett, who assured me, at the time, that he had received it from New Zealand, and had satisfied himself that it had been killed in that country. Probably both these species, if not indigenous to New Zealand, may occasionally occur there as accidental visitors from the Australian continent.

Mr. Buller also refers to the Harrier of New Zealand in the following terms (*tom. cit.* p. 107):—"Whether *Circus gouldi* and *Circus assimilis* are identical, is, I believe, a disputed point with ornithologists". I have recently compared several New-Zealand specimens of *C. gouldi*, Bonaparte, with Australian specimens of the Harrier figured in Mr. Gould's 'Birds of Australia' (pl. 26) under the name of *C. assimilis*, and was satisfied that they are absolutely identical.

This species should stand as *C. gouldi*, the other name having been erroneously attached to it by Mr. Gould; for the bird originally figured and described under that title in Jardine and Selby's 'Illustrations of Ornithology' (ii. pl. 51) is the young of *C. jardinii* (B. Austral. pl. 27), and this latter is therefore the true *C. assimilis* of those ornithologists. I am, &c.,

J. H. GURNEY.

SIR,—A new species of Barbet has been passed over as an intermediate state of the young of *Megalæma mystacophanus* (Temminck); and for it we propose the following name and diagnosis:—

MEGALÆMA HUMII, sp. n.

Sexes alike: body green; lores, a triangular occipital patch,

* [Both these statements were made in Mr. Gould's 'Handbook to the Birds of Australia' (i. pp. 29 and 51), and the first repeated in 'The Ibis' for 1866 (p. 421).—ED.]

and a small spot on each side of the breast, scarlet; forehead greenish yellow shading into light blue, a line above and below the eye bright blue; the sides of the occiput, and whole neck and nape, very dark green, tipped with crescents of bright shining green; upper plumage rich dark green, with the quills brown as in all the other *Megalæmatinæ*.

In size it is rather larger than *M. mystacophanus*; wing 3·9, tail 2·7 in.

Hab. Borneo.

From *M. mystacophanus* it may be distinguished by the following characters:—

	Forehead.	Throat.	Superciliary streak.	Mystacial spot.
<i>M. mystacophanus</i> ..	Golden-yellow.	Scarlet.	Black.	Yellow.
<i>M. humii</i>	Greenish-yellow, shading into blue.	Pale green.	Blue.	Blue.

Among the Asiatic species of the group the sexes do not differ, and in the young bird the whole plumage is generally green, the bright colours of the head being gradually assumed. It was thought that the green throat of *M. humii*—an uncommon colour in the adult bird, would turn into scarlet, and the greenish forehead into golden-yellow; but the fact that in many specimens the scarlet on the occiput was fully developed, while not a trace had appeared on the throat, raised doubts in our minds. A few weeks ago we received a specimen from Penang of the young stage of the true *M. mystacophanus*, which had the scarlet on the throat almost entirely developed, while the occipital spot was still tinged with green and mixed with green feathers. This settles the question of the distinctness of the species.

All the specimens that we have as yet seen of *M. humii* are from Borneo—*M. mystacophanus* being found in Malacca and Sumatra. We have not seen enough examples to be able to speak with any certainty on this point; but the Bornean species, while distinct, present in so many cases analogies to the corresponding species of Malacca and Sumatra, that it is probable that this gives one more instance of the generic similarity, and specific distinctness, of the fauna of these districts.

We have named this bird after Mr. Allan Hume, a well-known contributor to your pages, and intend to give a figure of both stages of this bird in our work, now in course of publication.

Yours, &c.,

C. and G. MARSHALL.

London, 20 Sept. 1870.

SIR,—Mr. Gurney has called my attention to the following points in my recent paper on Dr. von Heuglin's work. Mr. Gurney considers that *Vultur chinco* (*supra*, p. 422) was founded by Daudin on "Le Chincou" of Levaillant, whose plate represents *V. cinereus* from China, where it has lately been rediscovered by Père David. He further informs me that the bird lately brought home from Abyssinia by Mr. Jesse, and named *Bubo ascalaphus* by Dr. Finsch is really *B. dilloni*, having ascertained this fact by examining the specimen now in Lord Walden's collection. Lastly, I am quite wrong in suggesting (p. 434) that *Lanius collurio* does not breed in South Africa; for Mr. Andersson found it doing so in several places, as I am informed by Mr. Gurney; and M. Jules Verreaux likewise tells me that he often found the nest in South Africa.

I am, &c.,

R. B. SHARPE.

Colebrooke, Fermanagh,
29 Sept. 1870.

SIR,—I have the pleasure of informing you of the occurrence in Ireland of *Astur atricapillus*—an example of which was shot in the Galtee Mountains in February last*, and was at first believed to be a common Gos-Hawk, *A. palumbarius*; but, having since had the opportunity of examining some specimens of that species in Lord Lilford's collection, I immediately detected the difference between them and the Galtee bird. Upon returning to Ireland, with the kind permission of Dr. Carte, I compared it with a specimen of *A. atricapillus* from the Dublin Society's collection, and cleared up any doubt that remained in my mind—the closely-set transverse bars, the longitudinal streaks (stronger

* [An example has also been obtained in Scotland (*cf. supra*, p. 292)
—ED.]

and bolder than in the European species), the general dusky appearance of the breast, and the dark slate-blue head removing all question upon the subject. The bird was a mature female, and weighed 3 lb. 7 oz.; the ovary was somewhat enlarged, and the stomach contained the remains of a rabbit.

I am, &c.,

VICTOR BROOKE.

Turin, Sept. 1870.

SIR,—In Dr. Hartlaub's last "Bericht" on the progress of ornithology in 1868, he says (p. 125) that a specimen of *Hypocolius ampelinus* in this museum was brought from the Nyamnyam country by Sig. Piaggia. I cannot understand how that statement has been made; for Dr. Hartlaub wrote to me long ago about this specimen, and I told him that we had it from Sig. Botta—the same gentleman who (I believe) gave two other specimens to the Leyden Museum, so that most probably they were all from the same locality. I think it may be interesting to science to correct this mistake, as I believe that the exact locality where this bird was found has never been determined with certainty.

I remain, &c.,

TOMMASO SALVADORI.

. We may add that Dr. Hartlaub is also in error when, in the same place, he states that this species was figured in the 'Journal für Ornithologie.' The "gute Abbildung" appeared in the 'The Ibis' for 1868.—ED.

Our friend Herr Robert Collett, writing from Christiania in July last, informs us that he had learnt from Herr H. Friele, of Bergen, that in the summer of 1868 an example of *Upupa epops* was taken in Spitsbergen, and brought thence to Hammerfest by a ship-captain. We believe that the species had not before been met with at a higher latitude than 62°, so that this fact gives a considerable extension to its accidental range.

We regret to learn, from the pages of our contemporary the 'Journal für Ornithologie,' that the well-known veteran ornithologist FRIEDRICH BOIE died on the 3rd of March last. He was born, says Dr. Möbius in an obituary notice, in 1789. When his first contribution was published we are not quite sure; but his 'Reise durch Norwegen,' giving the results of his travels as far as the Loffoden Islands in the year 1817, appeared in 1822, being edited by Dr. H. Boie (his father, we believe); while he himself only last year performed the same office for a paper by Herr G. R. Barth. The deceased was probably the first ornithologist who explored the coasts of northern Norway, now so familiar to several of us; and many of his observations are still of the highest interest.

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- Buchanga, new species of (*see* Beavan, R. C.); *B. waldeni* (*see* Tytler, R. C.).
- 'Buckinghamshire,' Kennedy's 'Birds of Berkshire and,' 1868, 338.
- Buckley, T. E. (*see* Elwes, J. H., and Buckley, T. E.).
- 'Buenos Aires,' 'Anales del Museo publico de,' 1865, 535.
- Bulgaria, birds of (*see* Cullen, W. H.); birds-of-prey of Central (*see* Farman, C.).
- Bulger, G. E., Birds obtained in Sikkim, Eastern Himalayas, 1869, 154; letter on the habits of *Xantholæma indica*, 1866, 218.
- Buller, W., New Species of New-Zealand Birds, 1869, 37; Remarks on some disputed species of New-Zealand Birds, 1870, 455; on ornithology of New Zealand, 1870, 135.
- Buller's 'Essay on the ornithology of New Zealand,' 1867, 132; 'Birds of New Zealand,' announcement of, 1868, 504.
- 'Bulletin de la Société d'Acclimatation,' 1865, 529; 'de l'île de la Réunion,' 1865, 530; 1867, 129; 'ornithologique Suisse,' 1865, 530; 1868, 104, 342; 1870, 517.
- Bullmore's 'Cornish Fauna,' 1868, 100.
- Bunting, Cirl- (*see* Crewe, H. H.).
- 'Burman Ornithology,' 'Random Notes on Indian and,' 1868, 339.
- Burmeister on *Trochilidæ* of Azara, 1865, 535.
- Bustard, gular pouch of (*see* Cullen, H. W., and Ramsay, E. P.).
- Buteo lineatus* in Scotland (*see* Newcome, E. C.).
- Cabanis on ornithology of Von der Decken's travels in East Africa, 1870, 127.
- Cabanis and Heine's 'Museum Heineanum,' 1865, 101.
- Cæca, birds' (*see* Barron, C.).

- Calamoherpe palustris, Fatio on, 1868, 105.
- Caledonia, Jouan on birds of New, 1865, 337.
- Calherodius cucullatus in South Africa (see Layard, E. L.).
- Calliope, species of (see Tristram, H. B.).
- Calliste, recently discovered Tanager of the genus (see Selater, P. L.).
- Cambridge, the Strickland Collection in the University of (see Newton, Alfred).
- 'Canada,' King's 'Sportsman and Naturalist in,' 1867, 125.
- 'Causeries ornithologiques,' Vian's, 1868, 103, 104, 223.
- Cape Verde Islands, Keulemans on birds of the, 1867, 244.
- Cara on birds of Sardinia, 1868, 106.
- Carolina, Coues on birds of South, 1869, 118.
- Carus's 'Handbuch der Zoologie,' 1870, 514.
- 'Capitonidæ,' C. and G. Marshalls', 1870, 156, 505.
- Caprimulgidæ, Von Pelzeln on, 1866, 209; Salvadori on, 1869, 223.
- Cassin, J., letter on copper-plates of Vieillot's and Audebert's works, 1865, 116; on Icteridæ, 1866, 418; 1867, 377; 1868, 115.
- Cassin's 'Fasti Ornithologiæ,' 1865, 106; 1866, 417; 1868, 231.
- Cassin, Death of Mr. J., 1869, 244.
- 'Catalogue,' J. E. Harting's blank, 1868, 340; 'of British Birds,' G. R. Gray's, 1865, 525; 'of the Raptorial Birds in the Norfolk and Norwich Museum,' Gurney's, 1865, 99.
- Catching Ocydromus, method of (see Gurney, J. H.).
- Ceylon, ornithology of (see Blyth, E.).
- Ceyx, Salvadori on the genus, 1870, 133.
- Chalcopelia brehmeri (see Hartlaub, G.).
- Chambers, W. T. H., A Month in Tripoli, 1867, 97.
- Chambers-Hodgetts, Death of Mr., 1868, 134.
- Change of plumage in Thrushes (see Tytler, R. S.).
- Charitornis albertinæ, Schlegel on, 1866, 210.
- Chasmorhynchus, distribution of the species of (see Selater, P. L.).
- Chatham Islands, Travers on birds of the, 1866, 113.
- Cherbourg, Mémoires de la Société de, 1865, 337; 1867, 126.
- 'Chile,' Philippi and Landbeck's papers in the 'Anales de la Universidad de' (see Baird, S. F.).
- 'China Seas,' Collingwood's, 1868, 473.
- China, Verreaux on birds of Northern, 1868, 223.
- Chinese ornithology (see Swinhoe, R.).
- Christiania, Collett on birds of, 1865, 227.
- Church, A., investigations into the colouring of Touracoos' feathers, 1868, 133.
- Cichladusa arquata (see Hartlaub, G.); C. arquata and C. guttata (see Heuglin, M. T. von).
- Ciconia nigra (see Hamond, A.).
- Cilli, Seidensacher on the birds of, 1866, 116.
- Cinclus, on the genus (see Salvin, O.); the Pyrenean (see Tristram, H. B.); C. leucogaster (see Salvin, O., and Hartlaub, G.).
- Circus, species of, from the Philippine Islands (see Gurney, J. H.); C. aquipar, J. P. v. W. Crommelin on, 1867, 375; C. cineraceus, Montessus on, 1868, 104.
- Cisticola schoenicola, eggs of (see Brooks, W. G., and Newton, A.); Lunel on, 1865, 531.
- Clark, George, Account of the late Discovery of Dodos' remains in Mauritius, 1866, 141.
- Clark, J. W., letter on nidification of the Flamingo in France, 1870, 439.
- Classification of birds, Huxley on, 1869, 217; Mäklin on, 1870, 131. (See Huxley, T. H., and Newton, Alfred.)
- Claus's 'Grundzüge der Zoologie,' 1870, 514.
- Coccothraustes vulgaris in India (see Hume, A.).
- Coinde on insectivorous birds, 1865, 224.
- Collections of Messrs. Arthur and H. E. Strickland (see Newton, A.); of Prince Maximilian of Wied, 1868, 251.
- Collett on birds of Christiania, 1865, 227; of Hvaløerne, 1868, 113; note on occurrence in Spitsbergen of Upupa epops, 1870, 539.
- Collett's 'Birds of Norway,' 1869, 225.
- Collingwood, Chinese birds mentioned by Dr. (see Swinhoe, R.).
- Collingwood's 'China Seas,' 1868, 473.
- Coloration of Cuckoos' eggs (see Smith, A. C.).
- Colour of vultures' eyes (see Gurney, J. H.).
- Colouring of Touracoos' feathers (see Church, A.).
- Colquhoun's 'Sporting Days,' 1867, 239.
- Columba risoria, Alléon on, 1868, 222.
- 'Columbia,' Lord's 'Naturalist in Vancouver Island and British,' 1867, 126.

- Colymbus torquatus*, Coues on, 1868, 229.
- Commentary on Dr. Jerdon's 'Birds of India' (*see* Blyth, E.).
- 'Conspectus Avium Picinarum,' Sundevall's, 1866, 415.
- Corethrura guatemalensis* (*see* Salvin, O.).
- 'Cornish Fauna,' Bullmore's, 1868, 100.
- 'Cornwall,' Rodd's 'Guide to the Ornithology of,' 1868, 100; 1870, 264.
- Costa Rica, Salvadori on birds from, 1869, 222.
- Costa-Rica birds, Mr. Lawrence's list of (*see* Salvin, O.).
- Costa-Rican Bell-bird and its allies (*see* Salvin, O.).
- Coues, E., Ornithology of a Prairie-journey, and Notes on the Birds of Arizona, 1865, 157; Field-notes on *Lophortyx gambeli*, 1866, 46; From Arizona to the Pacific, 1866, 259; The Natural History of *Quiscalus major*, 1870, 367; on *Procellariidæ*, 1867, 131; on *Colymbus torquatus*, 1868, 229; on *Alcidæ*, 1868, 483; on birds of Arizona, 1868, 485; on birds of South Carolina, 1869, 118; extract from a letter from, on a species of *Spizella*, 1865, 117; letter on the ornithology of Arizona, 1865, 535.
- Coues's 'Prodrome of the Ornithology of Arizona Territory,' 1867, 130, 247; 'Birds of New England,' 1869, 228.
- Cramer on the egg in birds, 1870, 271.
- Crete, Drummond-Hay on birds of, 1865, 333.
- Crewe, H. H., letter on Osprey and Girt-bunting in Herts, 1865, 113.
- Crichton's 'Ramble to the Orcades,' 1866, 426; 1867, 125.
- Critical Remarks on Dr. von Heuglin's 'Ornithologie Nordost-Afrika's' (*see* Sharpe, R. B.).
- Crommelin on birds of Holland, J. P. van W., 1867, 244; on *Circus æquipar*, *Phalaropus hyperboreus*, and *Procellaria leucorhoa*, 1867, 375; letter on some hybrids in the *Anatidæ*, 1869, 127; letter on occurrence in Holland of *Parus caudatus*, 1870, 442.
- Crommelin's 'Hybridologie ornithologique,' 1868, 226.
- Crotch, G. R., letter on dates of publication of Temminck and Laugier's 'Planches coloriées,' 1868, 499.
- 'Cuba,' 'Repertorio fisico-natural de la isla de,' 1867, 377.
- Cuckoo, A. C. Smith on peculiarities of the, 1867, 374; certain facts in the economy of the (*see* Rowley, G. D.); eggs of the (*see* Rowley, G. D.); habits of the, 1868, 103; Rowell on parasiticism of the, 1865, 223.
- Cuckoos' eggs (*see* Smith, A. C.).
- Cuculidæ described by Linnaeus and Gmelin (*see* Walden, Viscount).
- Cullen, W. H., The Gular Pouch of the Male Bustard, 1865, 143; letter on *Aquila naevioides*, and breeding of *Larus minutus* in Bulgaria, 1867, 247.
- Cunningham, R. O., The Solan Goose or Gannet, 1866, 1; letters on the ornithology of the 'Nassau' voyage, 1868, 122, 486; 1869, 232; birds, nests, and eggs collected by Dr. (*see* Newton, Alfred, and Sclater, P. L., and Salvin, O.).
- Cypselus, species of (*see* Sclater, P. L., and Shelley, G. E.).
- Dall, Bannister and Baird's 'Birds of Alaska,' 1870, 521.
- Danube, Zeebeor on birds of the Lower, 1865, 225.
- Darwin's 'Animals and Plants under Domestication,' 1868, 218.
- David's collections, Père Armand, 1865, 528.
- Dawkins, W. B., letter on ancient existence of Pheasants in England, 1869, 358.
- Decken's travels in East Africa, Cabanis on ornithology of Von der, 1870, 127.
- Degland and Gerbe's 'Ornithologie Européenne,' 1867, 240.
- Dendroeca, species of (*see* Sclater, P. L.).
- Denmark, Reinhardt on *Syrnhaptes paradoxus* in, 1865, 103.
- Depierre on *Lanius dubius*, 1868, 105.
- 'Deutschen Ornithologen-Gesellschaft,' 'XVII. Versammlung der,' 1870, 130.
- 'Devonshire Birds,' Rowe's, 1865, 221.
- Didine birds, skeletons of, 1868, 362.
- Didine bones in Mauritius and Rodriguez, discovery of (*see* Newton, A.).
- Dieck 'De Sterno Avium,' 1867, 246.
- 'Dierentuin,' Schlegel's, 1866, 117.
- Diggles's 'Ornithology of Australia,' 1868, 117, 348; 1870, 135.
- Dinornis, communications on, 1870, 136; photographs of (*see* Newton, A.).
- Distribution and Migrations of North-American birds (*see* Baird, S. F.).
- Distribution of *Alectoromorphæ*, Huxley on, 1869, 217; of birds in Great Britain during the nesting-season (*see* More, A. G.).
- Dodo, Behn on the, 1868, 479; Brandt on the, 1869, 227; Jäckel on an old

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- Dodos' remains in Mauritius, discovery of (*see* Clark, G.); skeleton, 1868, 362.
- 'Domestication,' Darwin's 'Animals and Plants under,' 1863, 218.
- Donacola castaneoethorax (*see* Ramsay, E. P.).
- Dove, nest of Stock- (*see* Harting, J. E.).
- Drake, C. F. Tyrwhitt, Birds of Tangier and Eastern Morocco, 1867, 421; Further Notes on the Birds of Morocco, 1869, 147.
- Dresser, H. E., Birds of Southern Texas, 1865, 312, 466; 1866, 23.
- 'Dromade ardeola,' Van der Hoeven's 'Annotationes de,' 1870, 271.
- Droste on birds of Borkum, 1870, 128; on genus Numenius and bird-life at the north pole, 1870, 130.
- Drummond-Hay on birds of Crete, 1865, 333.
- Drymœca pekinensis (*see* Verreaux, J. P.).
- Dubois on Megalophus regius, A., 1867, 245; on Alca impennis, 1868, 112.
- Dubois's 'Oiseaux de la Belgique' and 'Oiseaux de l'Europe,' C. F., 1870, 511.
- Dubois, Death of M. C. F., 1868, 252.
- Eagle of Eastern Asia, Sea- (*see* Gurney, J. H.).
- East Finmark, Sommerfelt's list of the birds of, 1865, 104.
- Egg, Seidlitz on the structure of the, 1870, 130; in birds, Cramer on the, 1870, 271; of Pagophila eburnea (*see* Wright, E. P.).
- Egg-beds of *Æpyornis* (*see* Grandidier, A.).
- Egg-shell, R. Blasius on the, 1868, 228.
- Eggs, A. C. Smith on colouring of Cuckoos', 1867, 374; Cuckoos' (*see* Rowley, G. D., and Smith, A. C.); collected by the British North-American boundary commission, Lord on birds'-nests and, 1866, 208; of Alca impennis (*see* Feilden, H. W.); of *Cisticola schœnicola*, Lunel on, 1865, 531 (*see* Brooks, W. G., and Newton, A.); of some oceanic birds (*see* Layard, E. L.); of *Sterna*, Von König-Warthausen on, 1870, 130; of the Pigeon-Hawk (*see* Brewer, T. M.).
- 'Eggs of European Birds,' supplement to Bâdeker's, 1868, 341.
- Egypt Revisited (*see* Taylor, E.).
- Elanus caruleus (*see* Shelley, G. E.).
- Elliot, D. G., Supposed New Species of Pheasant of the genus *Argus*, 1865, 423; New Species of *Polyplectron*, 1866, 56; Remarks on some lately-described Pittidæ, with a Synopsis of the Family as now known, 1870, 408; letter on new species of *Numida*, 1870, 300.
- Elliot's 'Birds of North America,' 1866, 417; 1867, 376; 1868, 345; 1870, 277; 'Phasianidæ,' 1869, 464; 1870, 520; 'Tetraoninæ,' 1865, 228, 345; 1866, 213.
- Elwes, H. J., Bird-Stations of the Outer Hebrides, 1869, 20; letter on birds of prey in Scotland, 1867, 143; letter on birds of Travancore, 1870, 526.
- Elwes, H. J., and Buckley, T. E., List of the Birds of Turkey, 1870, 59, 188, 327.
- Emberiza melanocephala at Brighton (*see* Gould, J.); E. pusilla at Brighton (*see* Rowley, G. D.).
- Engadine, Baldamus and Saratz on birds of the Upper, 1870, 517.
- English Fens, former existence of a large Pelican in the (*see* Milne-Edwards, A.).
- Episternal apparatus of birds, P. Harting on the, 1866, 116.
- Ethiopian Region, Ornithological Notes from the (*see* Sperling, R.); Oriolidæ of the (*see* Sharpe, R. B.).
- Eudynamis, sketch of the genus (*see* Walden, Viscount).
- Eure-et-Loir, Marchand on birds of the, 1865, 223; 1868, 103, 223; 1869, 220.
- 'Europe,' C. F. Dubois's 'Oiseaux de l', 1870, 511.
- 'European Birds,' supplement to Bâdeker's 'Eggs of,' 1868, 341.
- 'Européenne,' Degland and Gerbe's 'Ornithologie,' 1867, 240.
- Eversmann's 'Addenda ad Zoographiam Rosso-Asiaticam,' 1867, 383.
- 'Exotic Ornithology,' Selater and Salvin's, 1866, 426; 1867, 123, 372; 1868, 335; 1869, 109; 1870, 262.
- Extinct Gigantic birds of the Mascarene Islands (*see* Schlegel, H.).
- Eye in Vultures, colour of (*see* Gurney, J. H.).
- Eyton's 'Osteologia Avium,' 1868, 98; 1870, 266.
- Færoes, Fischer on *Larus rossi* in the, 1865, 103.

- Falco eleonoræ, Krüper on, 1865, 341 ;
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'Falconer's Favourites,' Brodrick's, 1865,
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Fantee country in Western Africa, birds
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Farman, C., On some of the Birds of Prey
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'Fasti Ornithologiæ,' Cassin's, 1865, 106 ;
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Feilden, H. W., letter on a new species
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Filippi's 'Viaggio in Persia,' De, 1866,
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Finland, Malmgren on birds of, 1870, 132.
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Finnish birds (*see* Malmgren, A. J.).
Finsch, O., Remarks on some species of
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Finsch's 'Index ad Caroli Luciani Bona-
parte Conspectum Generum Avium,'
1865, 532 ; 'Psittacidæ,' 1868, 112 ;
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Hartlaub and, 1870, 127, 512.
Finsch and Hartlaub's 'Ornithologie
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'Flight in the Animal Kingdom,' Petti-
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Flight of birds, Marey on, 1870, 266 ;
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Fossil Penguin, 1870, 523.
'Fossiles,' A. Milne-Edwards's 'Oiseaux,'
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'Fossiles de la France,' A. Milne-Ed-
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'Française,' A. Milne-Edwards's 'Re-
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'France,' A. Milne-Edwards's 'Oiseaux
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Frauenfeld on a newly found picture of
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Frantzius, extract from letter from Dr.
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Fringilla carduelis, Steenstrup on habits
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Gaillard's translation of Meves's Orni-
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'Gallinaceous birds and Tinamous,'
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'Gallinæ in the British Museum,' G. R.
Gray's 'List of,' 1868, 99.
Gallinula pumila (*see* Selater, P. L.).
'Game-birds and Wild fowl of Sweden
and Norway,' Lloyd's, 1867, 372.
Gannet (*see* Cunningham, R. O.).
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Garrulax, Siamese (*see* Walden, Visct.).
Geoffroy on *Lophophorus lhuysi*, 1867,
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Gerbe's 'Ornithologie Européenne,' De-
land and, 1867, 240.
'Germany,' Borggreve's 'Birds of North,'
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Giglioli, H. H., Birds observed at Pisa
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Giglioli, H. H., and Salvadori, T., New
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- age round the World in 1865-68 by H.I.M.'s S. 'Magenta,' 1869, 61; On other new and little-known Birds collected during the same voyage, 1870, 185.
- Gillet, G., On the Birds of Novaya Zemlya, 1870, 303.
- 'Glasgow,' 'Proceedings of the Natural-History Society of,' 1870, 265.
- Godman, F. D. C., Birds of the Azores, 1866, 88.
- Goering on *Steatornis*, 1870, 522.
- Goldfinch, Steenstrup on habits of the, 1866, 212.
- Goose, name of Grey Lag (*see* Skeat, W. W.).
- Gould, J., letter on *Anthus spinoletta* near Brighton, 1865, 114; letter on *Ægithaliscus anophrys*, 1868, 250; letter on occurrence near Brighton of *Emberiza melanocephala*, and *Turdus atrigularis*, 1869, 128.
- Gould's 'Birds of Asia,' 1865, 220; 1866, 409; 1867, 371; 1868, 217, 472; 1870, 119; 'Birds of Great Britain,' 1865, 98, 526; 1867, 237; 1868, 216; 1869, 108; 1870, 120; 'Handbook to the Birds of Australia,' 1865, 239, 1866, 111; 'Supplement to the Birds of Australia,' 1868, 217; 1870, 119; 'Trogonidae,' 1870, 118.
- Gozo, birds observed in the islands of Malta and (*see* Wright, C.A.).
- Grandidier, A., Observations on the Eggbeds of *Æpyornis*, 1868, 65; on birds of Madagascar, 1868, 223.
- Grant's 'Birds found in Malta and Gozo,' 1867, 239.
- Gray, G. R., On the Bills of the species of Flamingo (*Phœnicopterus*), 1869, 438; note on *Tarsiger cucullatus*, 1867, 384.
- Gray's 'Catalogue of British Birds,' G. R., 1865, 525; 'List of Gallinæ in the British Museum,' 1868, 99; 'Handlist of Birds,' 1869, 464; 1870, 116.
- Gray, Robert, letter on occurrence in Scotland of *Astur atricapillus* and *Totanus chloropygius*, 1870, 291.
- Gray's 'Birds of the West of Scotland,' announcement of R., 1867, 256; 'Birds of Loch Lomond,' 1867, 373.
- Gray and Anderson's 'Birds of Ayrshire and Wigtonshire,' R., 1870, 126.
- Great Britain during the nesting-season, distribution of birds in (*see* More, A.G.).
- 'Great Britain,' Gould's 'Birds of,' 1865, 98, 526; 1867, 237; 1868, 216; 1869, 108; 1870, 120.
- Groom-Napier's 'Food, Use, and Beauty of British Birds,' 1866, 206.
- 'Grundzüge der Zoologie,' Claus's, 1870, 514.
- Günther, A., New Species of Long-tailed Titmouse from Asia Minor, 1865, 95.
- Gular pouch of Bustard (*see* Cullen, W. H., and Ramsay, E. P.).
- Gundlach on Cuban birds, 1867, 377.
- Gurney, J. H., Seventh additional List of Birds from Natal, 1865, 263; Eighth additional List of Birds from Natal, 1868, 40; Notes on Mr. Layard's 'Birds of South Africa,' 1868, 135, 253; Ninth additional List of Birds from Natal, 1868, 460; On the Birds of Prey of Madagascar and some of the adjacent Islands, 1869, 443; letters on species of *Accipiter*, 1865, 236, 547; letter on the occurrence of *Hypotriorchis concolor* in Zambesia, 1866, 127; letters on various birds of prey, 1866, 421; 1867, 464; letter on the colour of the eye in Vultures, 1867, 254; letter on the plumage of *Hypotriorchis eleonore*, 1867, 380; letter on the Sea-Eagle of Eastern Asia, 1868, 130; letter on *Scotopelia peli*, 1868, 250; note on an Indian Eagle, 1868, 352; letter on birds-of-prey of the Philippine Islands, 1868, 356; letter on *Bubo dilloni*, occurrence in northern France of *Pelecanus onocrotalus*, and method of catching *Ocydromus*, 1869, 462; letter on some South-African birds, 1870, 150; letter on a species of *Circus* from the Philippine Islands, 1870, 444; letter on some New-Zealand birds of prey, 1870, 534.
- Gurney's 'Catalogue of the Raptorial Birds in the Norfolk and Norwich Museum,' 1865, 99.
- Gurney, jun., J. H., letter on the occurrence in England of *Hirundo riocouri*, 1866, 423; 'Occurrences of the Grey Phalarope,' 1868, 101.
- Guatemala, sea-birds and waders of the Pacific coast of (*see* Salvin, O.).
- Haast, collections of Dr., 1868, 227.
- Hainan, birds of (*see* Swinhoe, R.).
- Hakodadi in Northern Japan, birds collected near (*see* Whitely, jun., Henry).
- Hamond, jun., A., letter on the occurrence of *Ciconia nigra* in Norfolk, 1867, 382.
- Hancock, J., letter on the occurrence of *Regaloides superciliosus* and *Milvus migrans* in England, 1867, 253.
- 'Handbook to the Birds of Australia,' Gould's, 1865, 239; 1866, 111.

- 'Handbuch der Zoologie,' Carus's, 1870, 514.
- 'Harrow,' Bridgemans' 'Birds of,' 1865, 222.
- Harting, J. E., On rare or little-known Limicolæ; 1869, 304, 426; 1870, 201, 378; letter on a remarkably-placed nest of the Stock-Dove, 1867, 379; letter on the occurrence in England of *Salicaria aquatica*, 1867, 468; letter on occurrence of *Tringa bairdi* in South Africa, 1870, 151.
- Harting's 'Birds of Middlesex,' J. E., 1866, 426; 1867, 123; blank 'Catalogue,' 1868, 340.
- Harting on the episternal apparatus of birds, P., 1866, 116.
- Hartlaub, G., Five New Species of Birds from the Feejee Islands, 1866, 171; description of *Chalcopelia brehmeri*, 1865, 236; on *Campephagidæ*, 1865, 340; letter on identity of *Cichladusa arquata* and *Bradyornis speikii*, 1865, 546; extract from a letter from, on *Cinclus leucogaster*, and on supposed species of *Luscinia* from South Africa, 1867, 383; letter on *Nectarinia fantensis* and *Numida verreauxi*, 1870, 443.
- Hartlaub's 'Ornithologie Centralpolynesiens,' Finsch and, 1867, 245; 1868, 107.
- Hartlaub and Finsch's 'Ornithology of East Africa,' 1870, 127, 512.
- Hawk, eggs of the Pigeon- (see Brewer, T. M.).
- Hawkins, H. S., letter on nidification of *Nyctea nivea*, 1870, 298.
- Hebrides, bird-stations of the Outer (see Elwes, J. H.).
- 'Heineanum,' Cabanis and Heine's 'Museum,' 1865, 101.
- Heliomaster spectabilis* (see Salvin, O.).
- Hepburn, J., letter on the Booming Swallow, 1869, 126.
- Hepburn, Death of Mr. J., 1869, 360.
- Heuglin, M. T. von, On *Hypocolius ampelinus*, 1868, 181; On *Cichladusa arquata* and *C. guttata*, 1868, 280; The *Malurinæ* of North-eastern Africa, 1869, 79, 129.
- Heuglin's 'Ornithology of North-eastern Africa,' Von, 1870, 127 (see Sharpe, R. B.).
- Himalayan birds (see Beavan, R. C.).
- Himalayas, birds collected in the Western (see Pelzeln, A. von); birds obtained in Sikkim, Eastern (see Bulger, G. E.).
- Himantopus candidus* (see Feilden, H. W.).
- Hirundinea*, species of the genus (see Selater, P. L.).
- Hirundinidæ*, *Waldenia*, a new genus of (see Sharpe, R. B.).
- Hirundo riocouri* in England (see Gurney, jun., J. H.).
- History of ornithology, Arrigoni on the, 1868, 342.
- Hoffmann on *Scolopax rusticola*, 1868, 109.
- Holland, Crommelin on birds of, 1867, 244.
- Holmgren's 'Scandinavian Birds,' 1868, 113; 1870, 516.
- Horne, C., letter on nidification of *Lobivanellus goensis*, 1869, 454; letter on nidification of *Mycteria australis*, 1870, 294.
- Hume, A. O., Stray Notes on Ornithology in India, 1868, 28; 1869, 1, 143; 1870, 181, 399; on some Indian birds, extract from a letter from, 1867, 471; letters on Indian birds, 1868, 233; 1869, 120, 238, 355; 1870, 136, 145, 283, 435, 438, 528, 530, 532; letter on occurrence in India of *Coccothraustes vulgaris*, 1869, 456.
- Hume's 'Scrap-Book,' 1870, 523.
- Humming-birds, Lawrence on new, 1868, 115.
- Hutton, F. W., Notes on some of the Birds inhabiting the Southern Ocean, 1865, 276; Birds seen during a Voyage from London to New Zealand in 1866, 1867, 185; On some of the Birds of Auckland, New Zealand, 1870, 392; letters on some New-Zealand birds, 1867, 378; 1869, 351.
- Hutton on flight of the Albatros, 1870, 122, 523; on birds of Great and Little Barrier Islands, 1870, 136.
- Huxley, T. H., letter on the classification of birds, 1868, 357.
- Huxley on classification of birds, and distribution of *Alectoromorphæ*, 1869, 217.
- Huxley's classification of birds, Prof. (see Newton, Alfred); lectures on birds (see Newton, A.).
- Hvalörerne, Collett on birds of, 1868, 113.
- 'Hybridologie ornithologique,' Crommelin's, 1868, 226.
- Hybrids between species of *Caccabis*, Olph-Gaillard on, 1865, 532; in *Anatidæ* (see Crommelin, J. P. v. W.).
- Hypocolius ampelinus* (see Heuglin, M. T. von, and Salvadori, T.).
- Hypotriorchis eleonoræ* (see Gurney, J. H.).

- 'Ibis,' 'The,' demand for, 1867, 146.
 'Iceland,' Shepherd's 'North-west Peninsula of,' 1867, 239; Paijkull's 'Summer in,' 1869, 112.
 Icteridæ, Cassin on, 1866, 418; 1867, 377; 1868, 115.
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 Incubation of Apteryx (*see* Newton, A.).
 Index to Bonaparte's 'Conspectus Avium,' 1865, 532.
 'India,' Adams's 'Naturalist in,' 1868, 219; vol. iii., Jerdon's 'Birds of,' 1865, 98.
 India, birds of (*see* Blyth, E.); stray notes on ornithology in (*see* Hume, A. O.); Sylvia melanopogon in (*see* Tristram, H. B.).
 Indian birds (*see* Beavan, R. C., Blanford, W. T., Blyth, E., and Hume, A.).
 Indian Eagles (*see* Brooks, W. G., and Gurney, J. H.).
 'Indian Oology and Ornithology,' Hume's 'Rough Notes on,' 1870, 523.
 Indian Thrushes (*see* Tytler, R. S.).
 Indian and Australian Regions, Sun-birds of the (*see* Walden, Viscount).
 'Indian and Burman Ornithology,' 'Random Notes on,' 1868, 339.
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 Italy, ornithological news from (*see* Giglioli, H.).
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 Jackson on *Melanerpes formicivorus*, 1868, 116.
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 Jardine, Sir W., letter on *Anarhynchus*, 1869, 461.
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 Jerdon, T. C., letter on *Phœnicopterus rubidus*, 1869, 230; letter on two species of Phasianidæ, 1870, 147.
 Jerdon's 'Birds of India,' vol. iii., 1865, 98; 'Birds of India,' a commentary on Dr. (*see* Blyth, E.).
 Jesse, Death of Mr. Edward, 1868, 252.
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 Jesse, W., letter on joining the Abyssinian expedition, 1868, 250.
 'Jornal de Sciencias de Lisboa,' 1868, 344; 1869, 117; 1870, 134, 519.
 Jouan on birds of New Caledonia, 1865, 337.
 'Journal für Ornithologie,' 1865, 339; 1868, 228.
 'Journal,' 'The South-African' (*see* Newton, A.).
 Kennedy's 'Birds of Berkshire and Buckinghamshire,' 1868, 338.
 Kennicott's oological explorations, Mr. (*see* Baird, S. F.).
 Keulemans on birds of Cape Verde Islands, and Ilha do Principe, 1867, 244.
 Keulemans's 'Onze Vogels in Huis en Tuin,' 1870, 268.
 Kingfishers of South Africa (*see* Sharpe, R. B.); of the Dutch Indies, Schlegel on the, 1866, 117.
 King's 'Sportsman and Naturalist in Canada,' 1867, 125.
 Kittacincla auricularis (*see* Selater, P. L.).
 Krefft, G., letter on some Australian birds, 1869, 348.
 'Klassen und Ordnungen des Thier-Reichs—Aves,' Selenka's, 1870, 513.
 König-Warhausen on eggs of *Sterna*, Von, 1870, 130.
 Krarup-Hansen on flight of birds, 1870, 516.
 Krüper on *Falco eleonoræ*, 1865, 341.
 Krüper's Nuthatch and other species of *Sitta* (*see* Selater, P. L.).
 Kumaon, birds of (*see* Brooks, W. G.).
 Labrador, Weiz's "Vertebrates of," 1867, 130.
 'Land of Israel,' Tristram's, 1866, 111.
 Landbeck's papers in the 'Anales de la Universidad de Chile,' Philippi and (*see* Baird, S. F.).
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- 'Lapland,' Wheelwright's 'Spring and Summer in,' 1865, 334.
- Larus minutus*, breeding of (*see* Cullen, W. H.). *L. rossi* in the Færoes, Fischer on, 1865, 103; specimen formerly in Andersonian Museum (*see* Alston, E. R.); specimen in Derby Museum (*see* Moore, T. J.).
- Laugier's 'Planches coloriées,' dates of publication of, Temminck and (*see* Crotch, G. R.).
- Lawrence on new American birds, 1865, 106; 1867, 247; 1868, 114, 115, 485; 1870, 280, 281; on new birds from Panama, 1866, 119; on new birds from Central America, New Granada, and Nicaragua, 1866, 214; on new birds from Central and South America, 1867, 130; on birds of New Granada, 1868, 230; birds from Puna Island and Yucatan, 1870, 280, 281.
- Lawrence's 'Birds of Sombrero,' 1865, 106; 'Catalogue of birds of New York,' &c., 1866, 418; list of Costa-Rica birds (*see* Salvin, O.).
- Layard, E. L., Further Notes on South-African Ornithology, 1869, 68, 361; On the *Tehagra* of *Le Vaillant*, 1870, 460; extract from a letter from, on the swimming of *Skuas*, 1866, 220; letter on the habitat of *Phlexis layardi*, 1866, 424; letter on the Wire-bird of St. Helena, 1867, 248; letter on the eggs of some oceanic birds, 1867, 457; letter on South-African Ornithology, 1868, 119, 242; 1870, 282, 443; letter on variation in plumage of birds, 1869, 458.
- Layard's 'Birds of South Africa,' 1866, 426; 1868, 101 (*see* Gurney, J. H., and Newton, Alfred).
- Legge, W. V., letter on the distribution of the Redshank in England, 1866, 420.
- Léotaud's 'Birds of Trinidad' (*see* Selater, P. L.).
- Léotaud, Death of Dr., 1867, 256.
- Le Vaillant, the *Tehagra* of (*see* Layard, E. L.).
- Lilford, Lord, Ornithology of Spain, 1865, 166; 1866, 173, 377.
- Limicolæ, rare or little-known (*see* Harting, J. E.).
- 'Lisboa,' 'Jornal de Sciencias de,' 1863, 344; 1869, 117; 1870, 134, 519.
- Lisbon, Mathews on birds near, 1865, 337; Museum, Du Bocage and De Sousa's list of birds in, 1870, 134.
- Lloyd's 'Game-birds and Wild Fowl of Sweden and Norway,' 1867, 372.
- Lobivanelus goensis*, nidification of (*see* Horne, C.).
- Lombardy, Bettoni on birds of, 1868, 106; 1870, 132.
- 'Lomond,' R. Gray's 'Birds of Loch,' 1867, 373.
- London to New Zealand, birds seen during a voyage from (*see* Hutton, F. W.).
- Lophophorus lhuysi*, Geoffroy on, 1867, 243.
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- Lord on birds' nests and eggs collected by the British North-American boundary commission, 1866, 208.
- Lord's 'Naturalist in Vancouver Island and British Columbia,' 1867, 126.
- Loriculus edwardsi* (*see* Walden, Viscount).
- 'Lothian,' Turnbull's 'Birds of East,' 1867, 373.
- Lu nel on *Cisticola schœnicola* and *Tringa platyrhyncha*, 1865, 531.
- Luscinia* from South-Africa, supposed species of (*see* Hartlaub, G.).
- Luxemburg, De la Fontaine on birds of, 1866, 210; 1867, 244.
- M'Coy, F., letter on a question of priority in the publication of names, 1868, 122.
- Macgillivray, Death of Mr. John, 1867, 472.
- Mackay, D., letter on some New-Zealand Birds, 1867, 144.
- Macleay, Death of Mr. W. S., 1865, 240.
- 'Madagascar,' Schlegel and Pollen's 'Faune de,' 1868, 224, 476; 1869, 112.
- Madagascar, a new *Muscicapine* bird from (*see* Sharpe, R. B.); Grandier on birds of, 1868, 223; Schlegel on birds of, 1866, 210; similarity of birds' names in Zambesia and (*see* Newton, E.).
- Madagascar and some of the adjacent islands, birds-of-prey of (*see* Gurney, J. H.).
- Mäklin on classification of birds, 1870, 131.
- Magellan, birds collected in the Straits of (*see* Selater, P. L., and Salvin, O.); birds of the Straits of (*see* Cunningham, R. O.).
- 'Magenta,' birds collected during a voyage round the world by H. I. M.'s S. (*see* Giglioli, H. H., and Salvadori, T.).

- Magnus on the sternum of birds, 1870, 271.
- Malay Archipelago, Pigeons and Rap-
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- 'Malay Archipelago,' Wallace's, 1869,
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- Malmgren on the birds of Spitsbergen,
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- Malta and Gozo, birds observed in the
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- 'Malta and Gozo,' Grant's 'Birds found
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- Malurinae of North-Eastern Africa (*see*
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- Mandt's 'Observationes' (*see* Reinhardt,
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- Marchand on birds of the Eure-et-Loir,
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- 'Marlborough,' Im Thurn's 'Birds of,'
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- Marshall, C. and G., letter on a new
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- Marshall's 'Capitonidæ,' C. and G., 1870,
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- Martens's Prussian Expedition to East-
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- Mascarene Islands, extinct gigantic birds
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- Mathews on birds near Lisbon, 1865,
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- Mauritius, discovery of *Didine* bones in
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- Megalophus regius*, A. Dubois on, 1867,
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- Melanerpes formicivorus*, Jackson on,
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- Melliss, J. C., On the Birds of the Is-
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- Meves on ornithology of Jemtland, 1865,
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- 'Mexico,' J. W. von Müller's 'Beiträge
zur Geschichte, Statistik und Zoolo-
gie von,' 1867, 246.
- Middendorff on bird-life in Siberia, Von,
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- 'Middlesex,' J. E. Harting's 'Birds of,'
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- Migrations of North-American birds,
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- Millies on a newly discovered figure of
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- Milne-Edwards, A., On the former Ex-
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- Milne-Edwards's 'Recherches pour servir
à l'histoire de la faune ornithologique
française,' A., 1866, 413; 'Oiseaux
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- Milne-Edwards, H., on David's collec-
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- Milvus migrans* in England (*see* Han-
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- Montagu's 'Ornithological Dictionary,'
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- Montessus on *Circus cineraceus*, 1868,
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- Moore, T. J., note on specimen of *La-
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- More, A. G., Distribution of Birds in
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- Morocco, birds of Tangier and Eastern
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- Morrell's 'Manual of Comparative Ana-
tomy,' 1870, 508.
- Motacilla aureocapilla* (*see* Walden,
Viscount).
- Müller's 'Reisen in den Vereinigten
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- Mulsant and Verreaux on *Trochilidæ*,
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- Mundy's photographs of *Dinornis*, Mr.,
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- Muscicapula atricapilla* (*see* Wharton, C.);
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- Museum, Du Bocage and De Sousa's
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- 'Museum,' G. R. Gray's 'List of Gal-
linæ in the British,' 1868, 99.

- 'Museum,' Gurney's 'Catalogue of the Raptorial Birds in the Norfolk and Norwich,' 1865, 99.
- 'Muséum d'histoire naturelle des Pays-Bas,' Schlegel's, 1865, 102, 342, 533; 1867, 375; 1868, 110.
- 'Museum Heineanum,' Cabanis and Heine, 1865, 101.
- Mussoorie, birds observed during a march from Simla to (*see* Tytler, R.C.).
- Mycteria australis* (*see* Horne, C.).
- Name of Grey Lag Goose (*see* Skeat, W. W.).
- Names in Zambesia and Madagascar, similarity of birds' (*see* Newton, E.).
- 'Nassau' voyage (*see* Cunningham, R.O., Newton, Alfred, and Selater, P. L., and Salvin, O.).
- Natal, lists of birds from (*see* Gurney, J. H.).
- Natterer's Travels, Von Pelzeln on, 1868, 227; 1869, 113; 1870, 272.
- 'Natural Selection,' Wallace's 'Contributions to the theory of,' 1870, 507.
- 'Naturalist,' 'The,' 1865, 336.
- 'Nature,' Blackburn's 'Birds drawn from,' 1868, 220.
- 'Neau-Show,' Swinhoe's, 1866, 207.
- Nectarinia fantensis* (*see* Hartlaub, G.).
- 'Nederlandsch Tijdschrift voor de Dierkunde,' 1865, 343; 1866, 210; 1867, 243.
- Nesting-season, distribution of birds in Great Britain during the (*see* More, A. G.).
- Nest of Stock-Dove (*see* Harting, J. E.).
- Nests and eggs collected by Dr. Cunningham (*see* Newton, Alfred); collected by the British North-American boundary commission, Lord on birds', 1866, 208; of New-Zealand birds (*see* Ramsay, E. P.).
- New Caledonia, Jouan on birds of, 1865, 337.
- Newcome, E. C., Letter on occurrence of *Buteo lineatus* in Scotland, 1865, 549.
- 'New England,' Coues's 'Birds of,' 1869, 228.
- 'New England,' Samuels's 'Birds of,' 1868, 346.
- New Granada, Lawrence on birds of, 1866, 214; 1868, 230.
- New Guinea, Rosenberg on birds of, 1865, 340.
- 'New Jersey,' Turnbull's 'Birds of East Pennsylvania and,' 1870, 127.
- Newman's 'Dictionary of British Birds,' 1866, 410.
- Newton, Alfred, Notes on the Birds of Spitsbergen, 1865, 199, 496; On an apparently undescribed Bird from the Seychelle Islands, 1865, 331; remarks on Prof. Huxley's proposed Classification of Birds, 1868, 85; Additional Notes on Mr. Layard's 'Birds of South Africa,' 1868, 265; The Strickland Collection in the University of Cambridge, 1869, 320; On Existing Remains of the Gare-fowl (*Alca impennis*), 1870, 256; On the Nests and Eggs collected by Dr. Cunningham, 1870, 501; notes on species of *Anthus* occurring in England, 1865, 115, 237; note on remains of *Alca impennis* from Caithness and Funk Island, 1865, 116; note on Mr. E. Bartlett's Expedition to the Amazons, 1865, 117; note on Mr. F. Godman's voyage to the Azores, 1865, 240; announcement of 'The Record of Zoological Literature,' 1865, 362; note on a remarkable discovery of Didine bones in Rodriguez, 1865, 551; adoption of rules for zoological nomenclature by the British Association, 1865, 552; note on an interesting discovery of Didine bones in Mauritius, 1866, 128; note on species of *Oxynotus*, 1866, 224; announcement of Messrs. Selater and Salvin's 'Exotic Ornithology,' Mr. Layard's 'Birds of South Africa,' Mr. Harting's 'Birds of Middlesex,' Mr. Stevenson's 'Birds of Norfolk,' and Mr. Crichton's 'Ramble to the Orcaes,' 1866, 425; note on Mr. Andersson's projected 'Avifauna of South-western Africa,' 1866, 426; note on further discovery of Didine bones in Rodriguez, 1867, 146; note on Prof. Huxley's lectures on birds, 1867, 254; notes on a question of priority in the publication of names, 1867, 255; 1868, 122; announcement of Mr. R. Gray's work on the birds of the west of Scotland, 1867, 256; note on the collections of Messrs. Arthur and H. E. Strickland, 1867, 383; note on the eggs of *Cisticola schenicolus*, 1868, 131; notes on incubation of the Apteryx, 1868, 251, 504; note on the 'South-African Journal,' 1868, 502; note on unpublished figures of the Dodo and other birds of Mauritius, 1868, 503; announcement of Mr. Buller's 'Birds of New Zealand,' and Mr. Mundy's photographs of Dinornis, 1868, 504; note on acids used in the preservation of birds, 1869, 239; announcement of Mr. G. R. Gray's 'Hand-list,' and Mr. Elliot's 'Mono-

- graph of Phasianidæ,' 1869, 464; announcement of Messrs. Marshalls' 'Monograph of Capitonidæ,' 1870, 156; announcement of new edition of Yarrell's 'British Birds,' 1870, 302.
- Newton's 'Ootheca Wolleyana,' Alfred, 1865, 101.
- Newton, Edward, Visit to the Island of Rodriguez, 1865, 146; The Land-Birds of the Seychelles Archipelago, 1867, 335; extract from a letter from, on similarity of birds' names in Zambesia and Madagascar, 1865, 238.
- New York, Lawrence on birds of, 1866, 418.
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- 'New Zealand,' announcement of Mr. Buller's 'Birds of,' 1868, 504; Buller's 'Essay on the Ornithology of,' 1867, 132.
- New-Zealand birds (*see* Buller, W., Hutton, F. W., and Mackay, D.); nests and eggs of (*see* Ramsay, E. P.); birds-of-prey (*see* Gurney, J. H.).
- 'New-Zealand Institute,' 'Transactions and Proceedings of the,' 1870, 135, 522.
- Nicaragua, Lawrence on new birds from, 1866, 214.
- Nieobar Islands, Ball on birds of the, 1870, 526.
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- 'Nile and its Banks,' A. C. Smith's, 1869, 111.
- Nitzsch's 'Pterylographie' for the Ray Society, Translation of, 1865, 118; 1868, 96.
- Nomenclature, British Association Rules for (*see* Newton, A.).
- 'Norfolk,' Stevenson's 'Birds of,' 1866, 426; 1867, 238.
- North-American birds, distribution and migrations of (*see* Baird, S. F.).
- 'Norway,' Bowden's 'Naturalist in,' 1870, 122; Collett's 'Birds of,' 1869, 225; Lloyd's 'Game-birds and Wild Fowl of Sweden and,' 1867, 372.
- 'Norwich Museum,' Gurney's 'Catalogue of Raptorial Birds in the Norfolk and,' 1865, 99.
- 'Nouvelles Archives du Muséum,' 1865, 528.
- 'Novara,' Von Pelzeln's Ornithology of the voyage of the, 1866, 115.
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- Oological explorations, Mr. Kennicott's (*see* Baird, S. F.).
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- 'Oology,' Westerlund's 'Scandinavian,' 1868, 114.
- 'Oology and Ornithology,' Hume's 'Rough Notes on Indian,' 1870, 523.
- Oomètre, Fatio on the, 1865, 532.
- 'Ootheca Wolleyana,' Alfred Newton's, 1865, 101.
- 'Orcades,' Crichton's 'Ramble to the,' 1866, 426; 1867, 125.
- Orde, J. W. P., letter on a work illustrated by Bewick, 1866, 323; letter on the occurrence of *Turtur auritus* in Argyleshire, 1867, 248.
- Oriolidae of the Ethiopian region (*see* Sharpe, R. B.).
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- 'Osteologia Avium,' Eyton's, 1868, 98; 1870, 266.
- 'Osteology of Gallinaceous Birds and Tinamous,' Parker 'On the,' 1865, 100.
- Owen, R., Evidence of a Species of large Parrot contemporary with the Dodo in Mauritius, 1866, 168; 'On the

- Skeleton of *Alca impennis*, 1865, 336.
- Owen's 'Anatomy of Vertebrates,' 1866, 408.
- Owl, Tawny (*see* Wharton, C. B.).
- Oxynotus, species of (*see* Newton, A.); *O. ferrugineus*, Pollen on, 1865, 530.
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- Pacific coast of Guatemala, sea-birds and waders of (*see* Salvin, O.).
- Pagophila eburnea, egg of (*see* Wright, E. P.).
- Pajikull's 'Summer in Iceland,' 1869, 112.
- Palestine, ornithology of (*see* Tristram, H. B.).
- Panama, Lawrence on new birds from, 1866, 119.
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- Parker 'On the Osteology of Gallina-ceous Birds and Tinamous,' 1865, 100.
- Parker's 'Shoulder-girdle and sternum in the Vertebrata,' 1868, 474.
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- Parus, species of (*see* Swinhoe, R.); *P. borealis*, Fatio on, 1865, 532; *P. caudatus* in Holland (*see* Crommelin, J. P. v. W.); *P. hudsonicus*, var. *littoralis*, Bryant on, 1866, 121; *P. palustris* (*see* Alston, E. R.).
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- 'Pays-Bas,' Schlegel's 'Muséum d'histoire naturelle des,' 1865, 102, 342, 533; 1867, 375; 1868, 110.
- Peculiarity of *Pelecanus trachyrhynchus* (*see* Baird, S. F.).
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- Pelzeln, A. von., Birds collected by Dr. Stoliczka in Thibet and the Himalayas, 1868, 302; letter on error in 'Record of Zoological Literature,' 1870, 296; on variation in the plumage of birds, and new *Caprimulgidae*, 1866, 209; on birds from New Zealand, 1868, 227.
- Pelzeln's ornithology of the voyage of the 'Novara,' Von, 1866, 115; 'Ornithologie Brasiliens,' 1868, 227; 1869, 113; 1870, 272.
- Penguin, fossil, 1870, 523.
- 'Pennsylvania and New Jersey,' Turnbull's 'Birds of East,' 1870, 127.
- Perny, collections of Mgr., 1868, 223.
- 'Persia,' De Filippi's 'Viaggio in,' 1866, 413.
- 'Petrel,' Ambrose's 'Some Account of the,' 1865, 105.
- Pettigrew's 'Flight in the Animal Kingdom,' 1868, 476.
- Pezophaps, skeletons of, 1868, 362.
- Phalaris psittacula in Sweden, 1869, 221.
- Phalarope, J. H. Gurney, Jun., on occurrences of the Grey, 1868, 101.
- Phalaropus hyperboreus, J. P. v. W. Crommelin on, 1867, 376.
- 'Phasianidæ,' Elliot's, 1869, 464; 1870, 520.
- Phasianidæ, species of (*see* Jerdon, T. C.).
- Pheasant in England (*see* Dawkins, W. B.); of the genus *Argus* (*see* Elliot, D. G.).
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- Philippi and Landbeck's papers in the 'Anales de la Universidad de Chile' (*see* Baird, S. F.).
- Philippine Islands, birds-of-prey of the (*see* Gurney, J. H.).
- Phlexis layardi (*see* Layard, E. L.).
- Phœnicopterus, bills of the species of (*see* Gray, G. R.); new species of (*see* Feilden, H. W.); in France, nidification of (*see* Clark, J. W.); *P. rubidus* (*see* Jerdon, T. C.).
- 'Picinarum,' Sundevall's 'Conspectus avium,' 1866, 415.
- Pigeons of the Malay archipelago (*see* Wallace, A. R.).
- Pisa and its neighbourhood, birds observed in (*see* Giglioli, H.).
- Pitta kreffti (*see* Salvadori, T.).
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- Pole, Droste on bird-life at the north, 1870, 130.

- Pollen, F., On the Genus *Oxynotus* of Mauritius and Réunion, 1866, 275; on *Oxynotus ferrugineus*, 1865, 530.
- Pollen's 'Mémoires Scientifiques,' 1867, 129; 'Faune de Madagascar,' Schlegel and, 1868, 224, 476; 1869, 112.
- 'Polynesiens,' Finch and Hartlaub's 'Ornithologie Central-' 1867, 245; 1868, 107.
- Polyplectron, new species of (*see* Elliot, D. G.).
- Port Denison, Queensland, birds from (*see* Ramsay, E. P.).
- Porto Rico, Bryant on birds from, 1867, 129.
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- Poule rouge, Behn and Von Frauenfeld on the, 1868, 479, 481.
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- Pratt, J., letter on *Anthus spinoletta* near Brighton, 1865, 114.
- Preparation of Birds, acids used in (*see* Newton, A.).
- Principe, Keulemans on birds of Ilha do, 1867, 244.
- Priority in publication of names, question of (*see* McCoy, F., Newton, A., and Ramsay, E. P.).
- Procellaria leucorrhoa, J. P. v. W. Crommelin on, 1867, 376.
- Procellariidæ, Coues on, 1867, 131; collected during a voyage round the world (*see* Giglioli, H. H., and Salvadori, T.).
- Prussian expedition to Eastern Asia, Von Martens's, 1868, 340.
- 'Psittacidæ,' Finsch's, 1868, 112; 1869, 223.
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- 'Pterylographie,' Ray Society's translation of Nitzsch's, 1865, 118; 1868, 96.
- Pucheran on *Muscicapa tricolor*, 1868, 103.
- Puna Island, Lawrence on birds from, 1870, 281.
- Pycnoptilus floccosus* (*see* Ramsay, E. P.).
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- Queensland, birds from Port Denison (*see* Ramsay, E. P.).
- Quiscalus major*, natural history of (*see* Coues, E.).
- Radde's travels in the South of Eastern Siberia, 1866, 118.
- Ramsay, E. P., Birds from Port Denison, Queensland, 1865, 83; Nests and Eggs of New-Zealand Birds, 1865, 154; Birds breeding in the Neighbourhood of Sydney, 1865, 298; 1868, 271; Additional List of Birds from Port Denison, 1866, 325; Illustrations of Australian Oology, 1867, 413; letters on species of *Pardalotus*, 1866, 126; 1868, 118; letter on *Pycnoptilus floccosus*, 1866, 419; letter on the supposed gular pouch of the Australian Bustard, 1867, 134; letter on the bower-building habits of *Sericulus melinus*, 1867, 456; letter on *Donacola castaneothorax*, 1868, 231; letter on a question of priority in the publication of names, 1869, 346.
- Ramsay, 'On Australian Oology,' 1867, 133.
- 'Raptorial Birds in the Norfolk and Norwich Museum,' Gurney's 'Catalogue of,' 1865, 99.
- Raptorial Birds of the Malay Archipelago (*see* Wallace, A. R.).
- Ray Society's translation of Nitzsch's 'Pterylographie,' 1865, 118; 1868, 96; work on the Shoulder-Girdle, 1868, 474.
- 'Record of Zoological Literature,' error in, 1870, 296 (*see* Newton, A.).
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- 'Reign of Law,' Duke of Argyll's, 1865, 527.
- Reinhardt, J., letter on Mandt's 'Observationes' and on *Uria mandti*, 1869, 239; on *Syrhaptes paradoxus* in Denmark, 1865, 103.
- Reproductive organs in *Accentor alpinus*, Fatio on, 1865, 224.
- 'Réunion,' 'Bulletin de la Société de l'île de la,' 1865, 530; 1867, 129.
- Réunion, on the genus *Oxynotus* of Mauritius and (*see* Pollen, F.).
- 'Revue et Magasin de Zoologie,' 1865, 223; 1868, 102, 222; 1869, 220.
- Richardson, Death of Sir John, 1865, 364.
- Ridgway on American Birds, 1870, 281.
- Riva on Birds of the Ticino, 1868, 105.
- Rocke, J., letter on the breeding of the Osprey in Scotland, 1865, 360.
- Rodd's 'Guide to the Ornithology of Cornwall,' 1863, 100; 1870, 264.

- Rodriguez, discovery of Didine bones in (*see* Newton, Alfred); visit to the island of (*see* Newton, Edward).
- Rosenberg on birds of New Guinea, 1865, 340.
- Ross Island, birds of (*see* Beavan, R. C.).
- Rowell on parasiticism of the Cuckoo, 1865, 223.
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- Rowley, G. D., Certain Facts in the Economy of the Cuckoo, 1865, 178; letter on *Emberiza pusilla* and *Anthus rufescens* near Brighton, 1865, 113; letter on eggs of the Cuckoo, 1865, 360; letter on the occurrence of *Serinus hortulanus* near Brighton, 1866, 215.
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- Salvadori, T., announcement of a projected work on Italian Birds, 1865, 361; letter on species of *Æthopyga*, 1865, 548; letter on some Italian Birds, 1870, 153; letter on *Pitta krefftii*, 1870, 296; letter on habitat of *Hypocolius ampelinus*, 1870, 539; on new birds in the Turin Museum, and on the White-backed Vultures of India and Africa, 1865, 338, 339; on two new genera, and on new species of birds, 1866, 415; on De Filippi's works, 1868, 342; on birds of Borneo, 1868, 482; on birds from Costa Rica, 1869, 222; on new *Caprimulgidæ*, 1869, 223; on the genus *Ceyx*, 1870, 133; on Italian birds, 1870, 518; on new birds, 1870, 518.
- Salvadori's 'Birds of Sardinia,' 1865, 225; review of Antinori's catalogue of North-east African Birds, 1870, 518.
- Salvin, O., The Costa-Rican Bell-bird and its Allies, 1865, 90; Sea-birds and Waders of the Pacific Coast of Guatemala, 1865, 187; Further Contribution to the Ornithology of Guatemala, 1866, 188; On the genus *Cinclus*, 1867, 109; On Mr. Lawrence's List of Costa-Rica Birds, 1869, 310; Additional Notes on *ditto*, 1870, 107; note on *Corethrura guatemalensis*, 1865, 238; letter on *Cinclus leucogaster*, 1867, 382; letter on *Helimaster spectabilis*, 1868, 251.
- Salvin's 'Exotic Ornithology,' Sclater and, 1866, 426; 1867, 123, 372; 1868, 335; 1869, 109; 1870, 262.
- Samuels's 'Birds of New England,' 1868, 346.
- Saratz on birds of the Engadine, 1870, 517.
- Sardinia, Cara on birds of, 1868, 106; Salvadori's birds of, 1865, 225.
- Saunders, H., Ornithological Rambles in Spain, 1869, 170; Notes on the Ornithology of Italy and Spain, 1869, 391; letter on oceanic birds, 1866, 124; letter on some Italian birds, 1870, 298.
- 'Scandinavian Birds,' Holmgren's, 1868, 113; 1870, 516.
- 'Scandinavian Oology,' Westerlund's, 1868, 114.
- Scania, Meves on birds of, 1870, 515.
- Schlegel, H., On some Extinct Gigantic Birds of the Mascarene Islands, 1866, 146; on a new Bird-of-Paradise, 1865, 343; on *Astur macrurus*, 1865, 344; on *Charitornis albertinae*, and birds of Madagascar, 1866, 210, 211.
- Schlegel's 'Muséum d'histoire naturelle des Pays-Bas,' 1865, 102, 342, 533; 1867, 375; 1868, 110; *Alcedinidæ* of the Dutch Indies, 1866, 117; 'Dieren-tuin,' 1866, 117; 'Observations zoologiques,' 1867, 243.
- Schlegel and Pollen's 'Faune de Madagascar,' 1868, 224, 476; 1869, 112.
- Schomburgk, Death of Sir Robert, 1865, 240.
- Sclater, P. L., Two rare Species of *Dendroeca*, 1865, 87; Krüper's Nuthatch and other Species of *Sitta*, 1865, 306; Description of a new Species of *Iridornis*, 1865, 495; Species of the genus *Muscisaxicola*, 1866, 56; "Kit-tacincla auricularis," Swinhoe, 1866, 109; Distribution of the Species of *Chasmorhynchus*, 1866, 406; On Dr. Léotaud's 'Birds of Trinidad,' 1867, 104; On a recently-discovered Tanager of the genus *Calliste*, 1868, 71; On the Species of the genus *Hirundinea*, 1869, 195; On the Systematic Position of *Indicator*, 1870, 176; letter on species of *Cypselus*, 1865, 234; note on species of *Dendroeca*, 1865, 237; on *Schlegelia calva*, 1865, 343; letter on occurrence of *Aquila naevioides* in Spain, 1865, 359; letter on the identity of *Gallinula pumila* and *G. angulata*, 1867, 254; letter on *Lanius crassirostris*, *Numida vulturina*, and *Plectropterus gambensis*, 1868, 501; letter on a species of *Chasmorhynchus*,

- 1869, 462; letter on species of Sun-birds, 1870, 296.
- Sclater, P. L., and Salvin, O., List of Birds collected in the Straits of Magellan by Dr. Cunningham, 1868, 183; Second List of *ditto*, 1869, 283; Third List of *ditto*, 1870, 499.
- Sclater and Salvin's 'Exotic Ornithology,' 1866, 426; 1867, 123, 372; 1868, 335; 1869, 109; 1870, 262.
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- Scott, D., extract from a letter from, on the habits of *Upupa epops*, 1866, 222; 1867, 135.
- Scott, Death of Dr. D., 1868, 134.
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- Sea-birds and waders of the Pacific coast of Guatemala (*see* Salvin, O.).
- Seidensacher on the Birds of Cilli, 1866, 116.
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- Selby, Death of Mr. P. J., 1867, 256.
- Selenka's 'Klassen und Ordnungen des Thier-Reichs—Aves,' 1870, 513.
- Selys-Longchamps, Baron de, Notes on various Birds observed in Italian Museums in 1866, 1870, 449.
- Sericulus melinus, bower-building habits of (*see* Ramsay, E. P.).
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- Severzow on *Astur brevipes*, 1865, 341.
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- Sharpe, R. B., On the Genus *Acredula*, 1868, 295; On Birds from the Fantee Country in Western Africa, 1869, 186, 381; 1870, 52, 470; On the Kingfishers of South Africa, 1869, 275; On the Oriolidæ of the Ethiopian Region, 1870, 213; Critical Remarks on Dr. von Heuglin's 'Ornithologie Nordost Afrika's,' 1870, 421, 537; On a new Muscicapine Bird from Madagascar, 1870, 498; letter on *Waldenia*, a new genus of Hirundinidæ, 1869, 461; letter on species of *Acredula*, 1870, 152.
- Sharpe's 'Alcedinidæ,' 1868, 472; 1869, 215; 1870, 121, 506.
- Shelley, G. E., letter on *Elanus caeruleus*, 1870, 149; letter on new species of *Cypselus* and *Turtur*, 1870, 445.
- Shepherd's 'North-west Peninsula of Iceland,' 1867, 239.
- 'Sherwood Forest,' Sterland's 'Birds of,' 1870, 123.
- 'Shoulder-girdle and Sternum in the Vertebrata,' Parker's, 1868, 474.
- Shrikes, on the rufous-tailed (*see* Walden, Viscount).
- Siamese Garrulax (*see* Walden, Viscount).
- Siberia, Radde's travels in the south of Eastern, 1866, 118.
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- Skeat, W. W., note on the meaning of the name of the Grey Lag Goose, 1870, 301.
- Skeleton of *Alca impennis*, Owen on the, 1865, 336.
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- Smith, A. C., Sketch of the Birds of Portugal, 1868, 428; on peculiarities of the Cuckoo, 1867, 374; letter on the coloration of Cuckoo's eggs, 1867, 469.
- Smith's, A. C., 'Nile and its Banks,' 1869, 111; 'Spring Tour in Portugal,' 1870, 266.
- Smith's, Cecil, 'Birds of Somersetshire,' 1870, 124.
- Solan Goose (*see* Cunningham, R. O.).
- Solitaires' skeletons, 1868, 362.
- 'Sombbrero,' Lawrence's 'Birds of,' 1865, 106.
- 'Somersetshire,' Cecil Smith's 'Birds of,' 1870, 124.
- Sommerfelt's list of the birds of East Finmark, 1865, 104.
- Sousa's list of birds in Lisbon museum, Du Bocage and De, 1870, 134.
- South Africa, Flamingoes of (*see* Anderson, C. J.); supposed species of *Luscinia* from (*see* Hartlaub, G.); *Tringa bairdi* in (*see* Harting, J. E.).
- 'South Africa,' Layard's 'Birds of,' 1866, 426; 1868, 101 (*see* Gurney, J. H., and Layard, E. L.).
- South-African birds (*see* Layard, E. L., and Malmgren, A. J.); Sylviidæ (*see* Tristram, H. B.).
- 'South-African Journal,' 'The' (*see* Newton, A.).
- Southern Ocean, notes on some of the birds inhabiting (*see* Hutton, F. W.).
- Southern Texas, birds of (*see* Dresser, H. E.).
- Spain, *Aquila naevioides* in (*see* Sclater, P. L.); birds of (*see* Saunders, H., and Lilford, Lord).

- Sperling, R. M., Ornithological Notes from the Ethiopian Region, 1868, 282.
- Spitsbergen, birds of (*see* Malmgren, A. J., and Newton, Alfred); Malmgren on the birds of, 1865, 227, 534; 1868, 229; *Upupa epops* in (*see* Collett, R.).
- Spizaetus andamanensis*, Tytler on, 1866, 412.
- Spizella*, on a species of (*see* Coues, E.).
- 'Sporting Days,' Colquhoun's, 1867, 239.
- Sleatornis*, Goering on, 1870, 522.
- Steenstrup on habits of *Fringilla carduelis*, 1866, 212; on *Alca impennis*, French translation of, 1868, 341.
- Sterland's 'Birds of Sherwood Forest,' 1870, 123.
- Sterna*, Von König-Warthaussen on eggs of, 1870, 130.
- 'Sterno Avium,' Dieck 'De,' 1867, 246.
- 'Sternum in the Vertebrata,' Parker's 'Shoulder-Girdle and,' 1868, 474.
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- Stevenson's 'Birds of Norfolk,' 1866, 426; 1867, 238.
- Stoliczka's collection of Himalayan birds, Dr., 1866, 412; 'Observations in the Sutlej valley,' Dr. (*see* Walden, Viscount).
- Strickland, collections of Messrs. Arthur and H. E. (*see* Newton, A.).
- 'Suisse,' 'Bulletin de la Société Ornithologique,' 1865, 530; 1868, 104, 342; 1870, 517.
- Sumichrast on birds of Vera Cruz, 1870, 278.
- Sun-birds, species of (*see* Sclater, P. L.); of the Indian and Australian regions (*see* Walden, Viscount).
- Sundevall's 'Swedish Birds,' 1865, 104, 534; 1870, 515; 'Conspicuum avium Picinarum,' 1866, 415.
- Supplement to Dr. Jerdon's 'Birds of India' (*see* Blyth, E.).
- Sutlej valley, Dr. Stoliczka's observations in the (*see* Walden, Viscount).
- Swallow, the Booming (*see* Hepburn, J.).
- Sweden, *Phalaris psittacula* in, 1869, 221.
- 'Sweden,' Wheelwright's 'Ten Years in,' 1865, 335.
- 'Sweden and Norway,' Lloyd's 'Game-birds and Wild Fowl of,' 1867, 372.
- 'Swedish Birds,' Sundevall's, 1865, 104, 534; 1870, 515.
- Swinhoe, R., Voice on Ornithology from Formosa, 1866, 129; Ornithological Notes from Formosa, 1866, 292, 392; Jottings on Birds from my Amoy Journal, 1867, 226, 385; Ornithological Notes from Amoy, 1868, 52; On the Ornithology of Hainan, 1870, 77, 230, 342; letters on Chinese ornithology, 1865, 107, 108, 111, 230, 346, 354, 538; 1866, 121; letter on birds of Hainan, 1868, 353; letter on Chinese birds mentioned by Dr. Collingwood, 1869, 347; letter on return from China, 1869, 463; letter on a new species of *Parus*, 1870, 154.
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- Taylor, E. C., Egypt Revisited, 1867, 48.
- Taylor, G. C., Birds observed during two Voyages across the North Atlantic, 1869, 388.
- Tchagra of Le Vaillant (*see* Layard, E. L.).
- Tchihatcheff's 'Voyage Scientifique dans l'Altai Oriental,' 1867, 332.
- Temminck and Laugier's 'Planches coloriées,' dates of publication of (*see* Crotch, G. R.).
- Tetragonops frantzii (*see* Frantzius, Dr. von).
- 'Tetraoninae,' Elliot's, 1865, 228, 345; 1866, 213.
- Texas, birds of Southern (*see* Dresser, H. E.).
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- Theiss, Zelebor on birds of the, 1865, 225.
- Theobald, P. W., note on nidification of *Nucifraga caryocatactes*, 1865, 361.
- 'Thetis,' Zoology of the Voyage of the, 1868, 340.
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- Thurn's, Im, 'Birds of Marlborough,' 1870, 509.

- Ticino, Riva on birds of the, 1868, 105.
 'Tinamous,' Parker 'On the Osteology of Gallinaceous Birds and,' 1865, 100.
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 Tristram's 'Land of Israel,' 1866, 111; 'Natural History of the Bible,' 1868, 219.
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 Wagtail, Grey (*see* Wharton, C. B.).
 Walden, Viscount, On the Muscicapa melaniotera of Gmelin, 1866, 316; The Rufous-tailed Shrikes, 1867, 211; On Lanius melanthes, Swinhoe, and on L. cephalomelas, Bp., 1868, 68; Remarks on Dr. Stoliczka's 'Observa-

- tions in the Suttlej Valley,' 1869, 208; On the Cuculidæ described by Linnæus and Gmelin, with a sketch of the genus *Eudynamis*, 1869, 324; On the Sun-birds of the Indian and Australian Regions, 1870, 18; letter on *Brachypus gularis*, 1866, 423; letter on a Siamese *Garrulax*, 1867, 381; letter on *Loriculus edwardsi* and *Lanius lucionensis*, 1867, 467; letter on Javan species of *Lanius*, 1869, 242; letter on *Motacilla aureocapilla*, 1870, 293.
- Waldenia, a new genus of Hirundinidæ (see Sharpe, R. B.).
- Wallace, A. R., Pigeons of the Malay Archipelago, 1865, 365; Raptorial Birds of the Malay Archipelago, 1868, 1, 215.
- Wallace's 'Malay Archipelago,' 1869, 216; 'Contributions to the theory of Natural Selection,' 1870, 507.
- Waterton, Death of Mr. C., 1865, 364.
- Webb on flight of the Albatros, 1870, 523.
- Weiz's vertebrates of Labrador, 1867, 130.
- Westerlund's 'Scandinavian Oology,' 1868, 114.
- Wharton, C. B., letter on *Muscicapa atricapilla*, 1865, 234; letter on distribution of the Grey Wagtail, Tawny Owl, and Pied Flycatcher, 1866, 323.
- Wheelwright's 'Spring and Summer in Lapland,' and 'Ten Years in Sweden,' 1865, 334, 335.
- Whitely, H., letter on the swimming of Skuas, 1866, 127.
- Whitely, jun., Henry, birds collected near Hakodadi in Northern Japan, 1867, 193.
- Wied, Death of Prince Maximilian of, 1867, 472; Collection of the late, 1868, 251.
- 'Wigtownshire,' R. Gray and T. Anderson's 'Birds of Ayrshire and,' 1870, 126.
- Wire-bird of St. Helena (see Layard, E. L.).
- 'Wolleyana,' Alfred Newton's 'Ootheca,' 1865, 101.
- 'Woodpeckers,' Sundevall's 'Conspectus of,' 1866, 415.
- Wright, C. A., Second Appendix to a List of Birds observed in the Islands of Malta and Gozo, 1865, 459; Third Appendix to *ditto*, 1869, 245; Fourth Appendix to *ditto*, 1870, 488.
- Wright, E. P., letter on the first discovery of the egg of *Pagophila eburnea*, 1866, 216.
- Wyatt, C. W., On the Birds of the Peninsula of Sinai, 1870, 1.
- Xantholæma indica, habits of (see Bulger, G. E.).
- Yarrell's 'British Birds,' announcement of a new edition of, 1870, 302.
- Yucatan, Lawrence on birds from, 1870, 280.
- Zambesia, *Hypotriorechis concolor* in (see Gurney, J. H.).
- Zambesia and Madagascar, similarity of birds' names in (see Newton, E.).
- Zebebor on birds of the Theiss and Lower Danube, 1865, 225.
- Zonotrichia albicollis* in Scotland, Angus on, 1870, 265.



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Black-headed Yellow-green Bird. Ptilinopus melanops.



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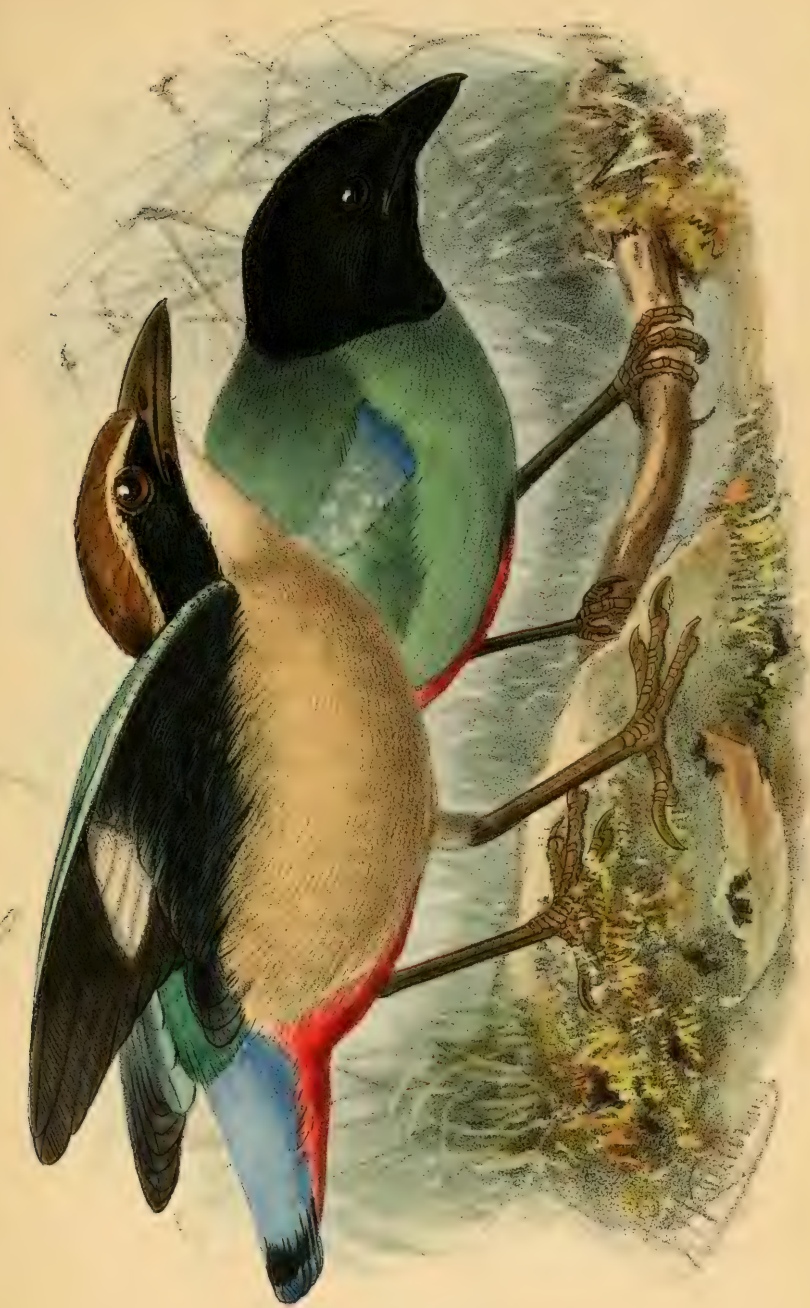
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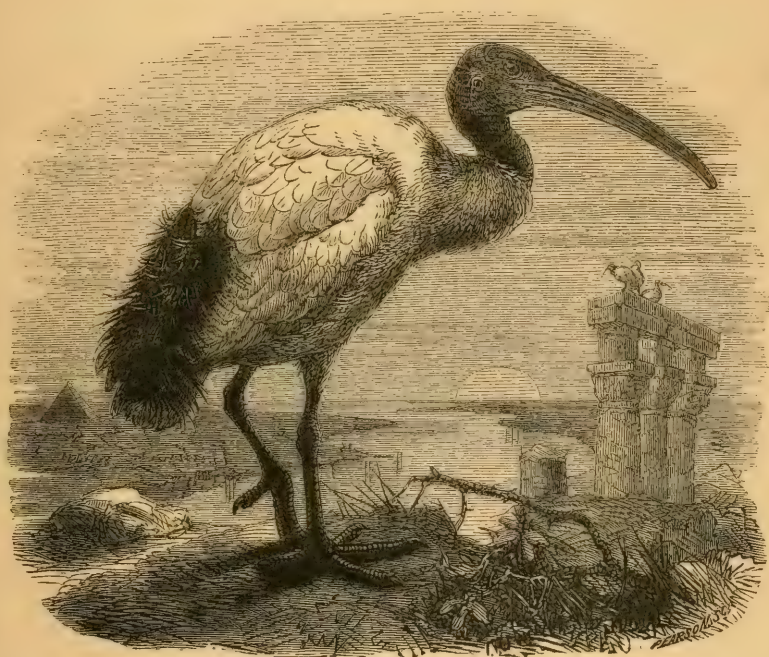
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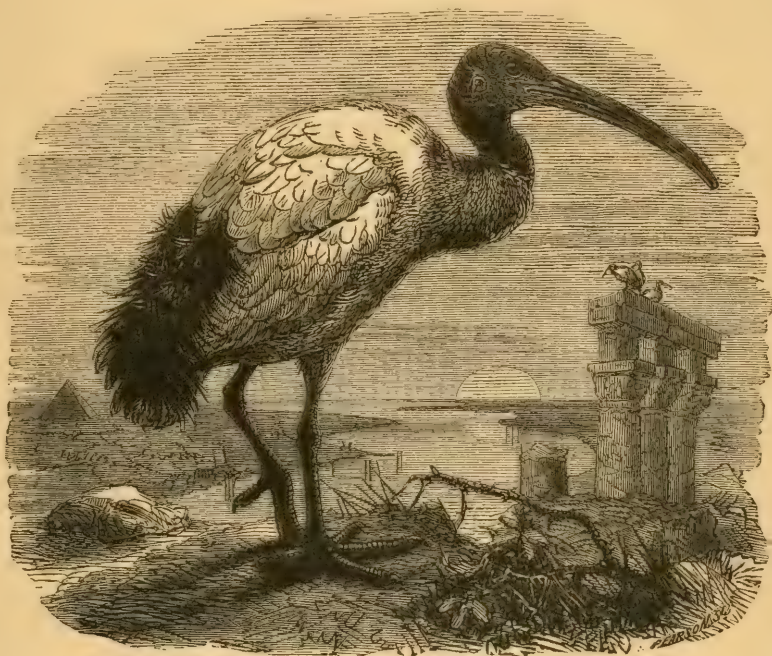
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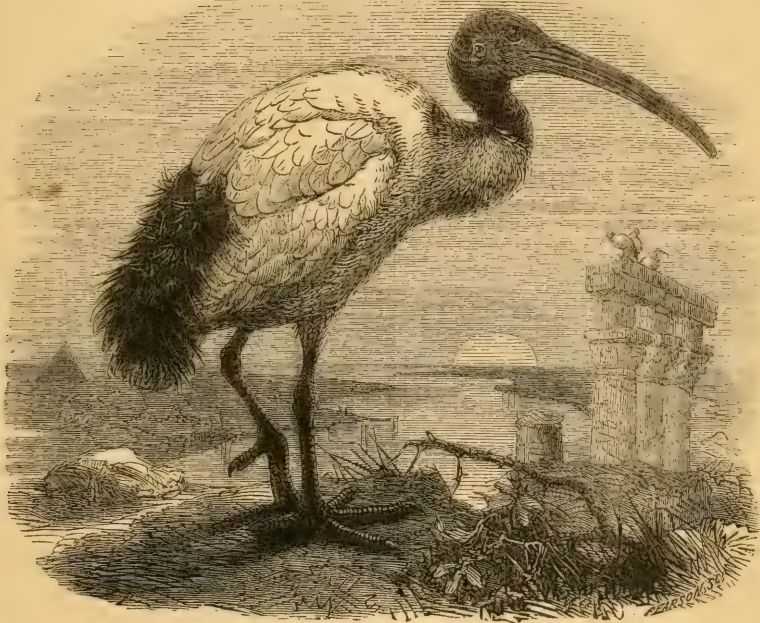
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